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Accessory
3' TOL
+

7 1917

VOL. VII. NO. I. PAWTUCKET, R. I., MAY, 1917. $2.00 THE YEAR.

# THE ACCESSORY and GARAGE JOURNAL

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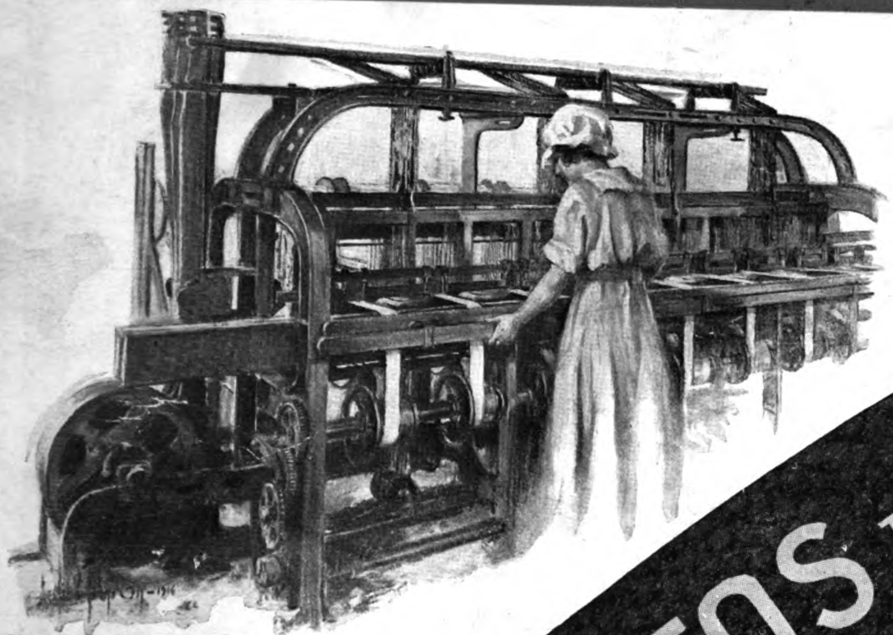
V.7.

1917/15



Weaving the Brake Lining.

MULTIBESTOS TRADE MARK REG.

A complete control of every manufacturing process insures the quality of Multibestos Brake Lining.

First the crude asbestos is carefully selected and represents the pick of the world's markets.

This asbestos is carded and twisted and interwound with brass wires—all in our own spinning department, under the eyes of our own experts.

Special high speed looms are used in weaving this yarn into the brake lining fabric. These machines are equipped to turn out a solid weave with no loose plies or "stuffers" which can become separated when the lining is in service. By the use of this special machinery Multibestos has more material to the square inch than any other brake lining.

More material—and that material of the best possible quality. Here is one of the big reasons back of Multibestos supremacy.

STANDARD WOVEN FABRIC COMPANY
WALPOLE, MASS.

# A MESSAGE TO DEALERS

*By Albert Champion, President Champion Ignition Co.*

**AC SPARK PLUGS Are Regular Truck Equipment on**

Federal
F-W-D
Jeffery
Diamond T
Menominee
Acme
Brockway
G. M. C.
Gramm-Bernstein
Gabriel
Riker
Maxim
M. H. C.
Henderson Bros.
Packard
Peerless
Pierce-Arrow
Republic
Reo
Sterling
Wilcox Trux
Wisconsin
Stewart
Moreland
Netco
Old Reliable
Sandow
Signal
American-LaFrance

HAVE you ever stopped to think that it is a common trait to exercise more care in most personal transactions than in the selection of many articles that mean so much to your business? If you required an operation you would only call in the most successful and reputed surgeon. You make sure that a bank is sound and well managed before entrusting it with your money. You take out insurance only in Companies that are stable and reliable. You ask for satisfactory references before engaging a man for a responsible position.

*And yet* many dealers will invest their money in Spark Plugs on the strength of extravagant claims not backed by any substantial proof of quality or past record.

**Mr. Dealer**—We do not make extravagant claims, we do not have to, we give you the highest references. Bordering this page, you will see the names of Motor Car and Truck makers who use AC Plugs for regular equipment. They are all quality firms and their endorsement constitutes our strongest reference. Invest your money safely; stock the plug your customers need; the plug which gives you more sales—more profits—no dead stock—and helps you build your business on a sound basis.

Albert Champion
*President*

CHAMPION IGNITION COMPANY, FLINT, MICHIGAN, U. S. A.
*Sole Manufacturers of*

**AC SPARK PLUGS Are Regular Equipment on These Automobiles**

Packard
Pierce-Arrow
Cadillac
Marmon
Hudson
Chalmers
Hupmobile
Chandler
Haynes
Chevrolet
Dort
Cole
Reo
Paige
Peerless
Dodge Bros.
Stearns-Knight
Saxon
Stutz
National
Velie
Oldsmobile
Jeffery
Jackson
Apperson
Fostoria

Buick
Oakland
Davis
Detroiter
Paterson
McFarlan
Westcott
Lexington-Howard
Daniels
Locomobile
Murray
Bour-Davis
Premier
Knox
McLaughlin (Canada)
Monroe
Crane-Simplex
Singer
Stephens
Jordan
Liberty
Scripps-Booth
Pathfinder
Abbott
Anderson
Pilot

# AC Plugs

# "I know it is good quality if it is listed in SNAPS"

## Why 34,000 Dealers Buy By Mail From The Service Motor Supply Co.

**The greatest, MOST TREASURED asset of the immense business** of the Service Motor Supply Co. is the CONFIDENCE of *thousands* of auto supply dealers, garage men and repair men. Fire could leave our great building a smouldering ruin tomorrow, and yet this *monument* of *good will* would stand forth unharmed.

**We enjoy this CONFIDENCE only** because we have *earned* it—because these thousands of dealers have found every transaction of the Service Motor Supply Co. marked by honor, honesty and service.

**There are many other dealers** whose confidence we have yet to win. We wish these dealers could see how *carefully* we plan, how *thoroughly* we investigate, how *persistently* we work so that every one of our dealers could say with *whole-souled* confidence: "I know it is good quality if it is listed in 'SNAPS.'"

**When an article is listed in** "SNAPS" its quality is guaranteed *by that very appearance,* and there is nothing indefinite about that guarantee. If, after making a purchase from us, you are not entirely satisfied your money will be *cheerfully refunded.*

**Naturally we subject every item** of merchandise in "SNAPS" to the closest scrutiny. We take nothing on *say-so* or *hearsay—we must know.* There is no toleration of *almost-truths*—the buyer is *told* before he is *sold.*

## HOW ONE JOBBER SELLS AUTO SUPPLIES BY MAIL

**Remember the Service Motor** Supply Co. sells by mail *only* and to dealers *only.* No consumer could possibly persuade us to sell to him—either by mail or in our Chicago Display Rooms.

**We have REVOLUTIONIZED the** auto supply business with our new methods of selling. We are the only auto supply house in the country which issues a big monthly catalog jam-full of quick-selling merchandise—the *best* auto supplies at the *lowest* prices.

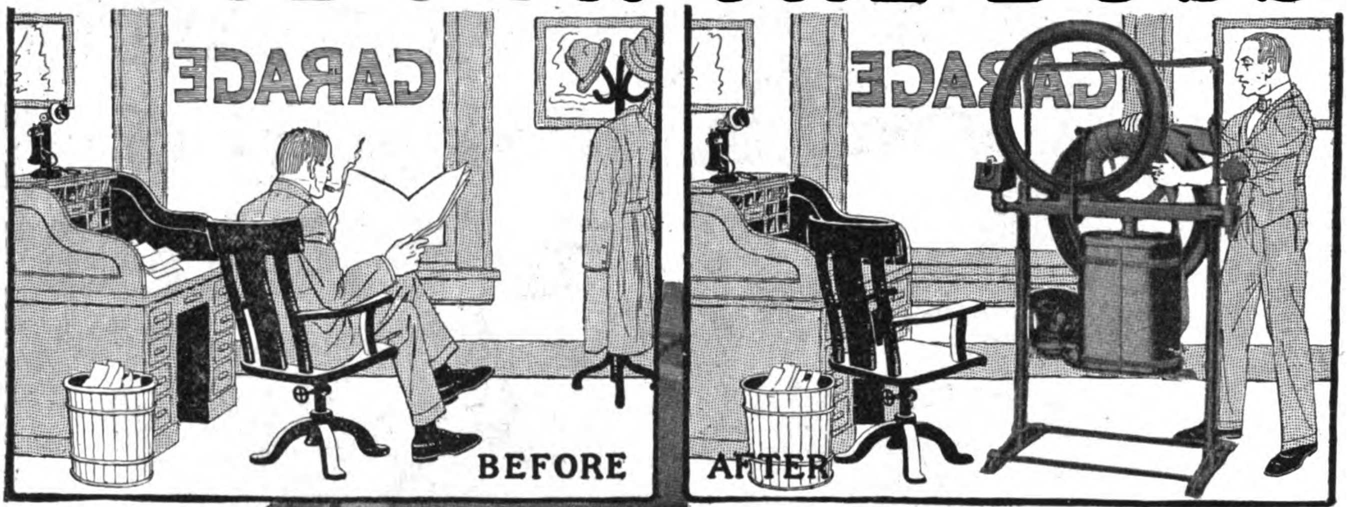
## Send Now for Your Copy of "SNAPS"

**Sit down** right now and write us on your letterhead (so we will know you are a *legitimate* dealer) for your copy of "SNAPS," the "National Bargain Directory of Auto Supplies." Turn over its 144 pages one after the other—study the *truthful* pictures and read the *accurate* descriptions; then send us a small *test* order and learn by experience what the *six-hour* service of the Service Motor Supply Co. means to you. Send in your request for "SNAPS" NOW.

(5)

**SERVICE MOTOR SUPPLY Co. 1523-25-27-29-31 MICHIGAN AVE. CHICAGO, U.S.A.**

# A JOB FOR THE BOSS



Are you a garage man—operating the average garage—making a little money—not much—limited in your earning because you have to be on the job yourself all the time in presentable shape, and yet the number of paying callers does not warrant this sacrifice of your time? If so, here is something new that you can set right up in your office—operate it in your spare moments—and make every moment earn big dividends. When a caller comes he will not find you under the car, grease begrimmed, and unfit to meet him—when the customer does not come, you are employed pleasantly—profitably—in other words, turning your idle time from a dead over-head loss to a profit—making the garage business a mighty profitable proposition for men in your position, instead of just earning a living or breaking even. The secret is—get one of

## HAYWOOD'S Model D.B. VULCANIZING PLANTS

Every customer in your garage is a prospect. 90 per cent. of them will prefer you, because you have their car when it is idle—you can make repairs for them without loss of time, and they are already favorably inclined toward you. They will appreciate your interest in them and will tell their friends—your service will be improved, and that's the real thing in getting customers.

### A WONDERFUL MACHINE

for all ordinary repairs to casings or inner-tubes. It is easy to handle—quick—fast—sold at a price to be attractive to bicycle stations, automobile agencies, accessory stores, garages—earns a big profit from the start—takes up very litle space—extremely simple to operate.

### AT AN UNUSUAL PRICE

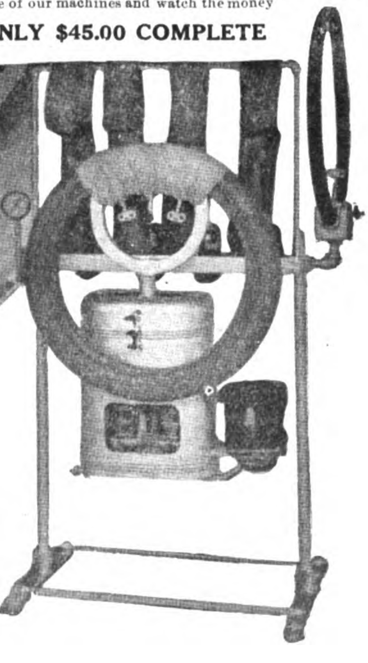
Only $45, complete with tools, for a machine that will earn its cost any week, if you are of the right stuff. It's operation is simplicity itself—anyone can operate it without special training. Our splendid book of instructions makes it all perfectly plain and clear. A little practice on an old casing or two, will quickly educate you and make you a tire expert. Or if you prefer, come to our complete training school at the factory—the expense is very modest—but none of our customers have found this course necessary on the new machines.

### BIG PROFITS

The profits are truly unlimited—depending solely upon the amount of time you can give it. When we have sold a machine our interest does not lag—we never forget—we keep coming to you with new ideas—new ways and means to enlarge your business—to get more money out of your accessories—help you to sell tires—the kind that give the owners the longest mileage—building you a business that is a real business.

To a man of your ability an investment of $45 is nothing, so do not hesitate—write today—find out all that we can do for you—make us demonstrate our proposition. When we have done so, put in one of our machines and watch the money come in.

**ONLY $45.00 COMPLETE**



Remember, we have done national advertising for six or seven years—used as high as 120 publications in one month—all to educate the public to **your** tire repair service. Fill out the coupon—let us send you all our information—you need it—you want it—whether you buy a machine or not. Get the name of the nearest jobber—see the machine—let others tell you what it has done for them and you will realize it is your big opportunity.

**A BUSINESS OPPORTUNITY COUPON.**

Mr. M. Haywood, Personal,
806 N. Capitol Ave.,
Indianapolis, Ind.
Dear Sir:—
Please send full details of the Haywood Model D-B Vulcanizing Plant
Name
Address

**HAYWOOD TIRE & EQUIPMENT CO., 806 No. Capitol Ave., Indianapolis, Ind.**

**(When Writing to Advertisers, Please Mention the Accessory and Garage Journal.)**

# for FORD transmissions

Pat. Jan. 15-'07. May 23-'16. Copyrighted Trademark, Advance Automobile Accessories Corp.

## They Make the Ford Brake *Brake!*

When you step on the brake you *know* there is going to be action—you *know* your Ford is going to *stop* and stop with a positive smoothness and easiness. *Gone* will be the *jerking* and *rattling* and *lurching* and *chattering* when you stop—all due to

**$3.00**
**per set of 3**

**ADVANCE**

CORK INSERT

TRADE MARK REG COPYRIGHTED 1917

**TRANSMISSION LININGS FOR FORDS**

**$3.00**
**per set of 3**

Cork inserts *stop the vibration, stop the rattle and stop the car.* The trouble isn't with the Ford—nor with its brake—nor with its simple and positive transmission system. The whole trouble is in the transmission linings. Ordinary transmission linings become hard and glasssy—smooth from the constant pressure, friction, and soaking in oil. When the brake is applied they grip and then slip—it's that grip and slip—again and again—that causes the vibration, that ruins your car and makes it rattle

ADVANCE CORK INSERTS can't get hard and glassy as does the ordinary transmission lining. They can't grip suddenly nor slip quickly. The cork won't allow them to. For cork can't char nor burn. Cork won't get oil logged and hard. The cork puts *permanent* and *positive grip* in transmission linings and the corks don't wear out.

## Don't Have Your Ford Transmission Relined Three or Four Times This Year

Put on a set of ADVANCE CORK INSERT LININGS and do away with the expense and nuisance of having the transmission relined every two or three months. Not only will it *outwear three sets of any other kind on the market,* but it will give far better service, *while* it is lasting, too. They give an ease of action in the Ford transmission that is unparalleled by other lining even when new.

**DEALERS' COUPON**

**Advance Automobile Accessories Corp.,**
Dept. E3-1, 56 E. Randolph St., Chicago

Please send one set of Advance Cork Insert Linings on regular dealer's terms.

*Name* ................................................
*City*..................................*State* ..........
*My Jobber's name is* ..................................

## Dealers: Order From Your Jobber

The demand for "Cork Inserts" is big right now. Your jobber has them. Order from him or us. Mention his name. He'll get full credit.

Get ready for the big volume of sales which will follow this advertising. Send the coupon.

**Advance Automobile Accessories Corp.**

Dept. E3-1, 56 East Randolph Street, Chicago, Ill.

# STAND BEHIND THE MEN BEHIND THE GUNS

**BUY**

# *A Liberty Loan Bond*

**AND**

# HELP WIN THE WAR

**Interest 3½%**

**Issued by the United States Government**

***Denominations—$50, $100, $500, $1,000, $5,000, $10,000, $50,000 and $100,000***

**FIRST PAYMENT AS LOW AS ONE DOLLAR**

**You have until August 30, 1917, to pay in full for your bonds**

***Ask any Banker, Postmaster, Express Company or Merchant for an Official Application Blank and---***

## Apply for Your Liberty Loan Bond Today

**A TRIBUTE TO THE FLAG and THE SAFEST INVESTMENT IN THE WORLD**

"Wars cannot be conducted without money. It is the first thing to be provided. In this war it is the most immediate help—the most effective help that we can give. We must not be content with a subscription of two billion dollars—we must oversubscribe this loan as an indication that America is stirred to the depths and aroused to the summit of her greatness in the cause of freedom. Let us not endanger success by complacent optimism. Let us not satisfy ourselves with the reflection that some one else will subscribe the required amount. Let every man and woman in the land make it his or her business to subscribe to the Liberty Loan immediately, and if they cannot subscribe themselves, let them induce somebody else to subscribe. Provide the Government with the funds indispensably needed for the conduct of the war and give notice to the enemies of the United States that we have billions to sacrifice in the cause of Liberty.

"Buy a Liberty Bond today; do not put it off until tomorrow. Every dollar provided quickly and expended wisely will shorten the war and save human life."

Secretary W. G. McAdoo,
May 14, 1917.

**A LIBERTY LOAN BOND IS UNCLE SAM'S PROMISE TO PAY AND HE IS WORTH $225,000,000,000**

# The Season's Most Popular Seller!

## Because the

# Wilmo Manifold

## Increases Gasoline Mileage 42% to 54%

***(According to A. A. A. Official Tests)***

December 30th, 1916, the Wilmo Manifold made its appearance.

Today, in four short months, the demand is measured by hundreds of thousands.

For the scientific principle and guaranteed gasoline saving have made their immediate appeal—

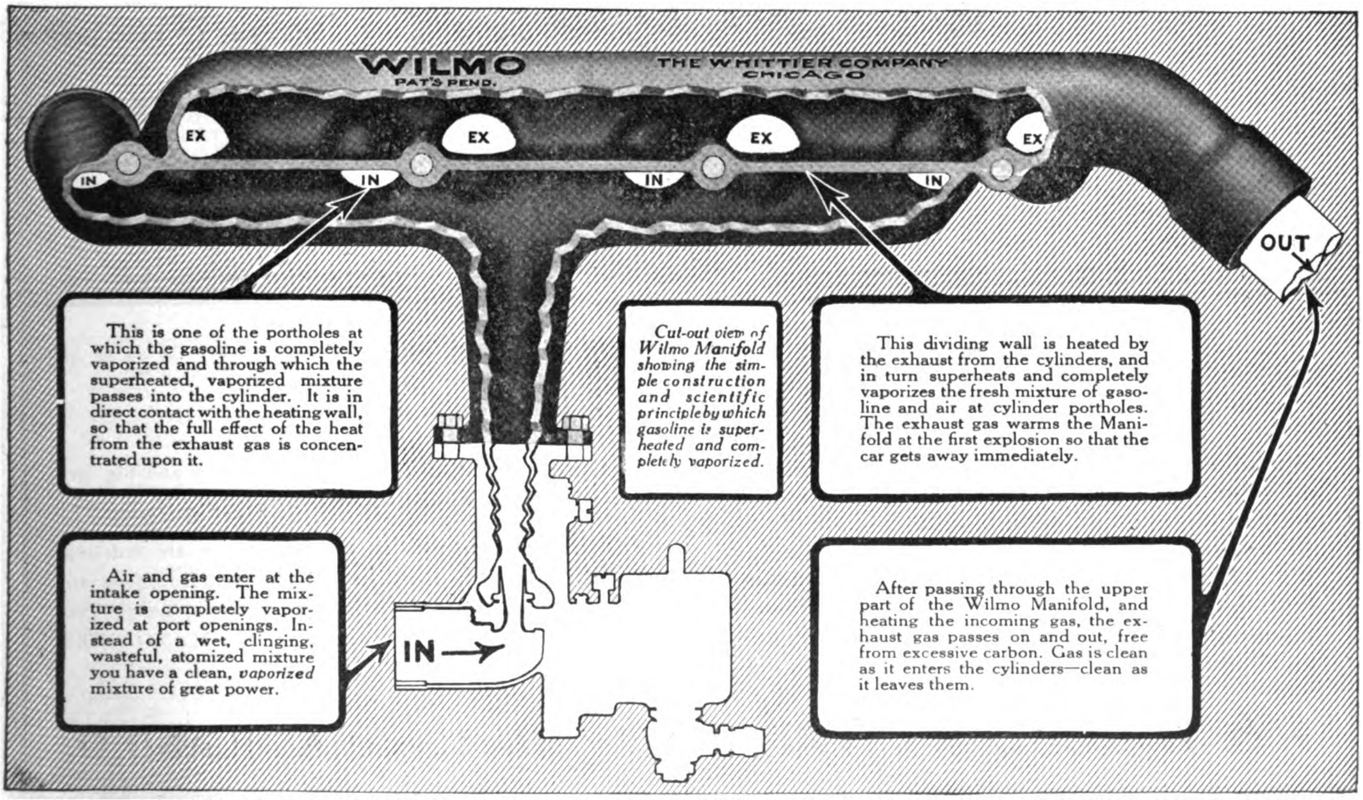
Not forgetting the utter simplicity by which the Wilmo Manifold is attached in a few minutes with an ordinary monkey-wrench.

Tests galore await you—official and otherwise—showing wonderfully increased gasoline mileage, and carbon practically eliminated, as a direct result of Wilmo Manifold efficiency.

A year 'round seller. Retail prices, $7.50 to $15, according to make of car.

Write today for full particulars.

**THE WHITTIER COMPANY**
First National Bank Building, Dept. 235, Chicago, Ill.



This is one of the portholes at which the gasoline is completely vaporized and through which the superheated, vaporized mixture passes into the cylinder. It is in direct contact with the heating wall, so that the full effect of the heat from the exhaust gas is concentrated upon it.

*Cut-out view of Wilmo Manifold showing the simple construction and scientific principle by which gasoline is superheated and completely vaporized.*

This dividing wall is heated by the exhaust from the cylinders, and in turn superheats and completely vaporizes the fresh mixture of gasoline and air at cylinder portholes. The exhaust gas warms the Manifold at the first explosion so that the car gets away immediately.

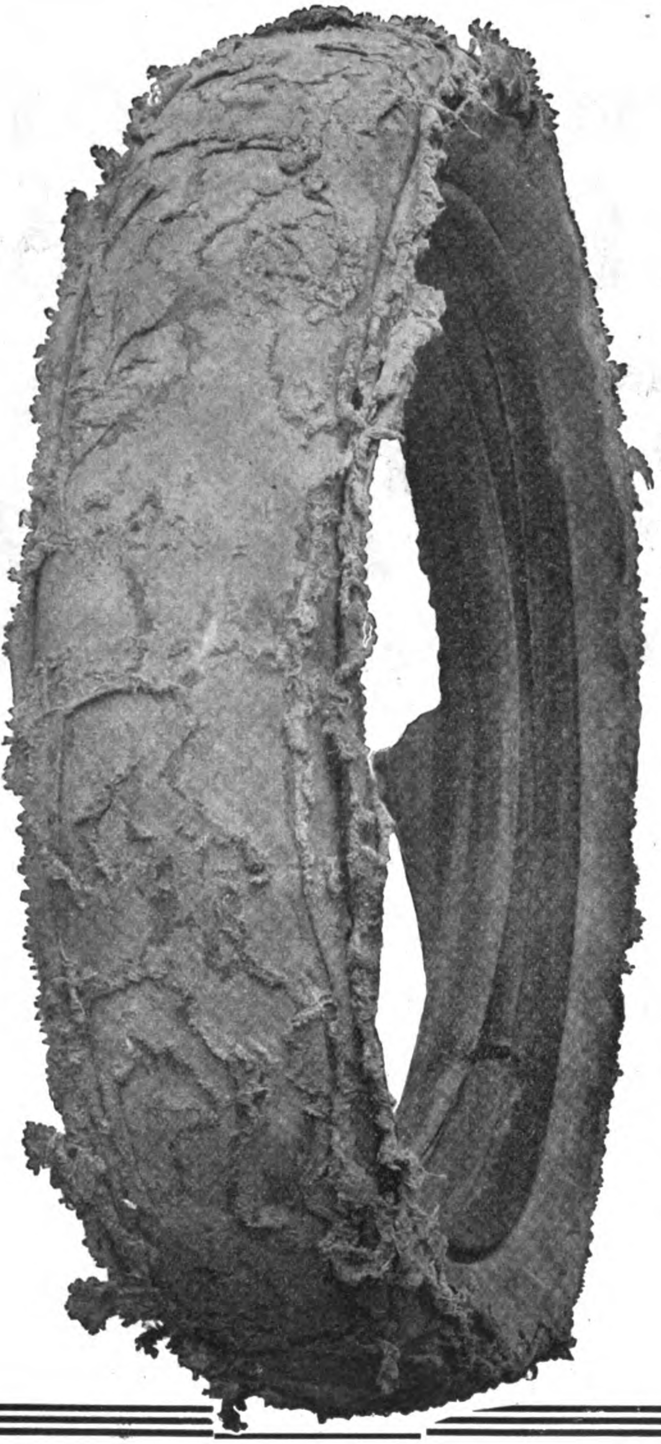
Air and gas enter at the intake opening. The mixture is completely vaporized at port openings. Instead of a wet, clinging, wasteful, atomized mixture you have a clean, *vaporized* mixture of great power.

After passing through the upper part of the Wilmo Manifold, and heating the incoming gas, the exhaust gas passes on and out, free from excessive carbon. Gas is clean as it enters the cylinders—clean as it leaves them.

What would this exclusive agency be worth in your town?

An agency that means you would earn all profits—be protected against price cutting—and have big revenues from a most successful tire and tube saving device. What would the agency be worth now—since tires and tubes have advanced in price—making every owner a prospective customer for four such devices?—

**MAXOTIRES**



## A Striking Example

A shoe that afforded usual mileage was equipped with a MAXOTIRE.

The average owner would have discarded it—yet with the MAXOTIRE, gave thousands of additional miles of service.

This was so much net gain to the owner.

The MAXOTIRE is as good as new, and will continue to save tires and tubes.

(This tire was exhibited at many STATE FAIRS and AUTO SHOWS and was examined by tens of thousands of Auto Owners.

# MAXOTIRES

We do business with but one dealer in any place and do not sell jobbers or consumers. Our proposition is broad and extremely liberal.

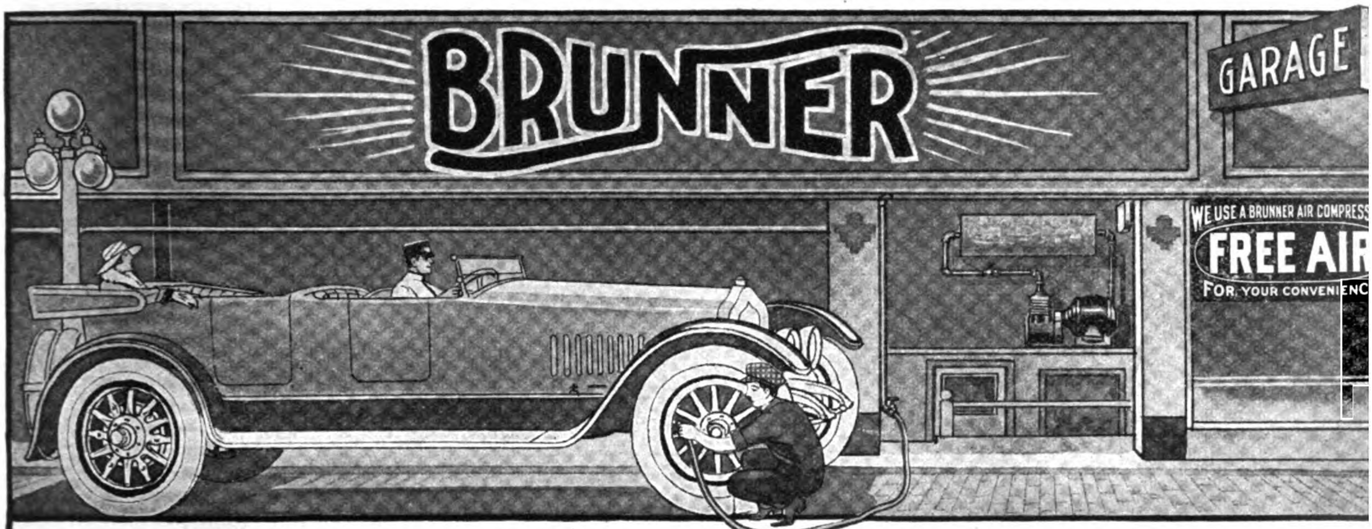
No other accessory sells so quickly or affords equal satisfaction. *The cost of tires and tubes is advancing and owners are seeking service giving and money saving equipment.*

Country-wide advertising brings queries from every city, town and village. Our dealers do all the business.

The quality of MAXOTIRES insure reorders and big net profits. MAXOTIRES sell themselves.

Our old dealers are with us this year—some are ordering MAXOTIRES in Car Load Shipments. Hundreds are ordering from a dozen to five-hundred tires at a time. You will be "doing it too"—if you get a few MAXOTIRES started. They sell themselves.

**K & W RUBBER COMPANY** **Third Street, ASHLAND, O.**

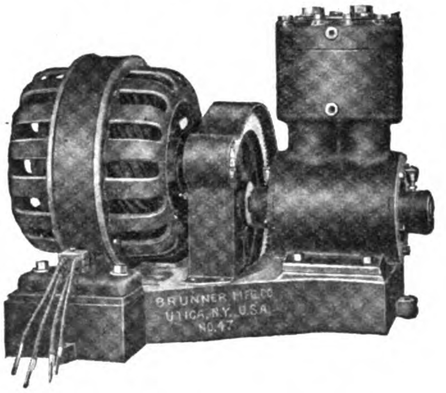


*The motorist who is Brunnerwise*
*With tires of the largest size*
*Knows Brunner service satisfies—*
*That's why they call him Brunnerwise.*

**YES, Mr. Garageman, the Brunnerwise Motorist knows that Brunner Service satisfies and he knows that when he pulls up in front of the garage bearing the Brunner Sign that he will find an ample supply of pure, cold air at his disposal.**

Thousands upon thousands of motorists are now mapping out their summer tours, and thousands of them are Brunnerwise Motorists with pleasant memories of the Brunnerized Garages along the way—and they will speed along the trail with one eye on the road and the other eye on the lookout for the Brunner Sign—the Brunnerwise Garageman will get their business.

Mr. Garageman these Brunner "ads" are making Brunnerwise Motorists every day. Motorists read these "ads" and are prompted to investigate Brunner Service—and when they do investigate Brunner Service they become Brunnerwise and accept the Brunner Sign as a sure sign of prompt and efficient service.



**INVESTIGATE THE BRUNNER AIR COMPRESSOR**

Be honest with yourself and investigate the garage air compressor question thoroughly before deciding on your new equipment. The Brunner will stand investigating and the more thorough the investigation the more certain will be your decision in favor of Brunner Service, because it not only insures compressed air efficiency of the very highest order, but it also insures that very desirable and liberal patronage of the Brunnerwise Motorist, which follows the Brunner Sign.

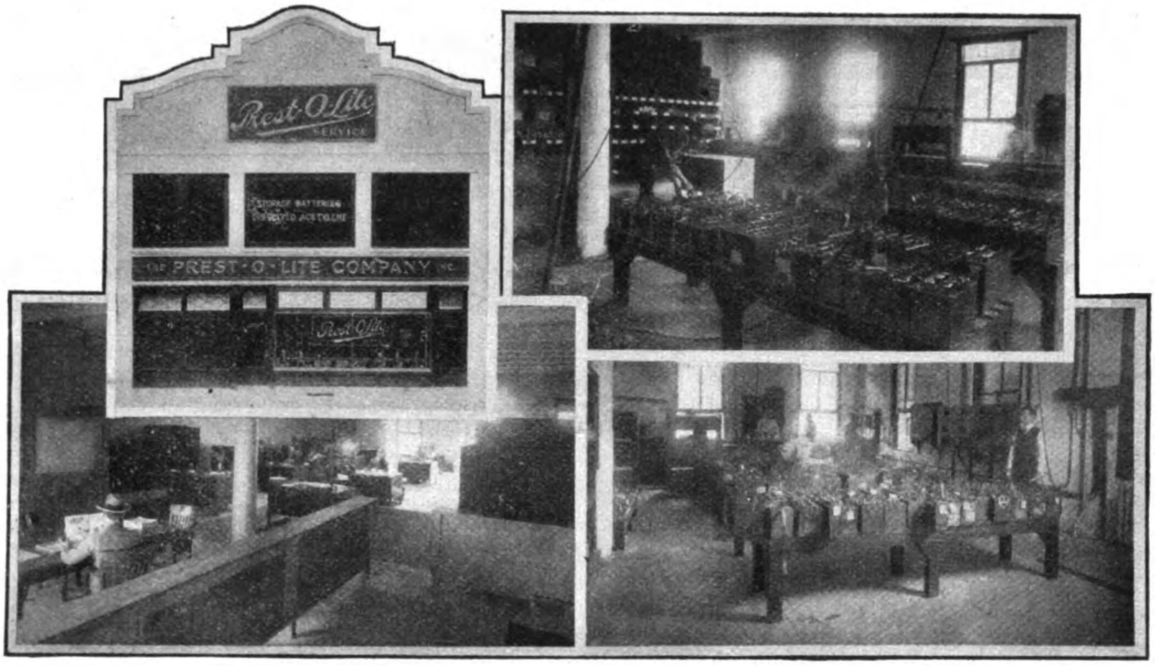
We will be glad to send you the name of the Brunner Jobber who covers your town, also our catalogue and Garageman's Handbook on Compressed Air—a book which every garageman should read carefully. They are all free for the asking.

**BRUNNER MANUFACTURING COMPANY**

Main Office and Plant:
UTICA,
N. Y.

Cincinnati Branch:
419 First National Bank Bldg.
Cincinnati, Ohio.

# Prest-O-Lite SERVICE in NEW YORK



Views above show (top) front view of Prest-O-Lite Direct Factory Branch at 206-208 Amsterdam Ave., New York City; (bottom) office of New York Branch.

The illustrations above show two views of the storage battery testing, charging and repair departments of the New York Branch

IN New York City and its nearby populous centers of industrial activity, the thousands upon thousands of automobiles in use create a large, steady demand for REAL BATTERY SERVICE.

The big Prest-O-Lite Direct Factory Branch in New York City, with its expert organization and ample facilities, is a sales depot and service headquarters for the Prest-O-Lite Battery—where manufacturers, distributors, dealers and car owners are assured direct factory service and co-operation.

With the adoption of battery ignition by a majority of car manufacturers, the storage battery may now be regarded as a *positive equipment necessity*. Consequently there is a large and growing demand for new storage batteries and expert battery service.

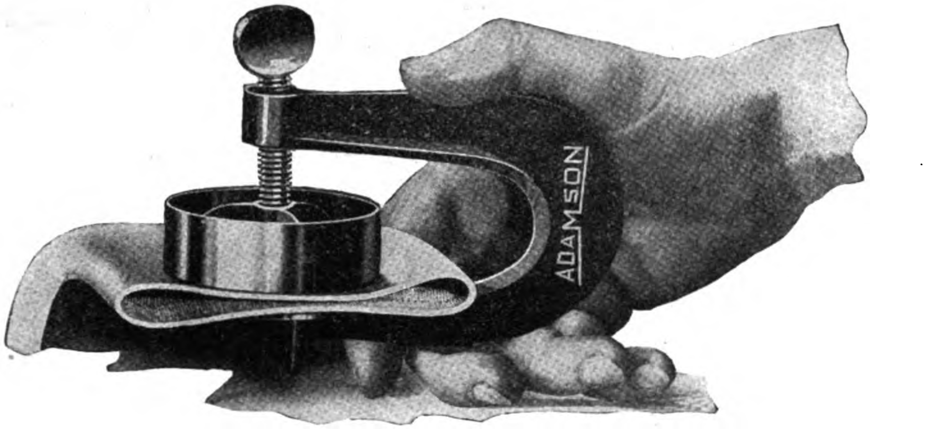
Garages and service stations everywhere are realizing large extra profits in battery replacements. Many have installed special equipment to provide complete repair and recharging facilities.

There may be a splendid opportunity going to waste right in your community. Get full details now on the Prest-O-Lite Battery proposition for dealers—also learn how special battery service stations may, with our co-operation, build up a profitable battery business of their own.

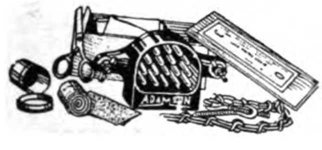
Interesting information sent on request.

**The Prest-O-Lite Co., Inc.,**
U. S. Main Office and Factory 908 Speedway, Indianapolis, Indiana
Canadian General Office and Factory, Toronto, Ontario, Canada

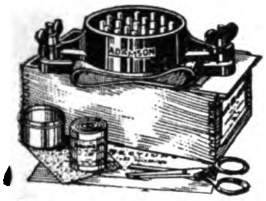
***The Prest-O-Lite battery is a better battery——backed by a better service.***



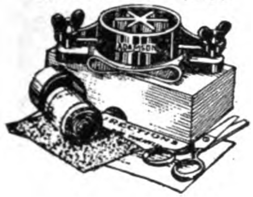
**For larger tube injuries, tire and tube blow-outs, tread cuts, etc., the old reliable "Adamson" line is complete with several models for car owner and garage use.**



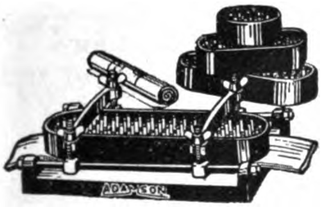
For all casings and tubes
**MODEL "U" $3.00**



For all Sizes of Inner Tubes
MODEL "T" $2.00



For tubes 3½" and under
**MODEL "M" $1.50**



For private garages and repair shops
**MODEL "S" $12.00**

GENUINE ADAMSON REPAIR GUM
REPAIR GUM
No cement is required

**Adamson Repair Gum**
A special quality for portable Vulcanizers, essential for best results

# ADAMSON

## 5 MINUTE VULCANIZER

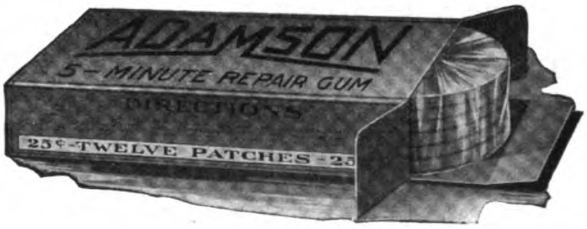
## (Model "E")

Meets the demand for a light and handy outfit for the quick repair of tube punctures.

Uses common gasoline—the most convenient and dependable fuel. Will vulcanize your tubes **anywhere** in five minutes.

Designed on the same proven principles that have made ADAMSON Vulcanizers the most practical and largest selling line in the world.

Complete with box of a dozen "Adamson" 5-Minute Repair Gum Patches for $1.50. Extra box of 12 patches only 25c.


ADAMSON
5-MINUTE REPAIR GUM
DIRECTIONS
25¢-TWELVE PATCHES-25

**DELAERS:** **This outfit will be a tremendous seller—Order now from your Jobber.**

***Sold by all Jobbers***

**Adamson Manufacturing Company**

**East Palestine, Ohio**

TIMKEN

NEW DEPARTURE

HYATT

# Three-in-One Factory Service

Three great bearing factories—Hyatt, Timken, and New Departure—are now giving automobile owners and dealers in every part of the country direct service on bearings.

They are rendering this factory service through the Bearings Service Company, an organization having branches in all principal cities.

Every branch carries a complete stock of bearings, and is kept supplied by the manufacturers with records which specify the particular bearings used at the various locations in every car.

Now, when you need a bearing, you can get it at the local branch—without delay, and with the assurance that it will fit the location for which it is required.

The next time you need a bearing, avail yourself of this unique service.

***Call, write, or telephone to the nearest branch***

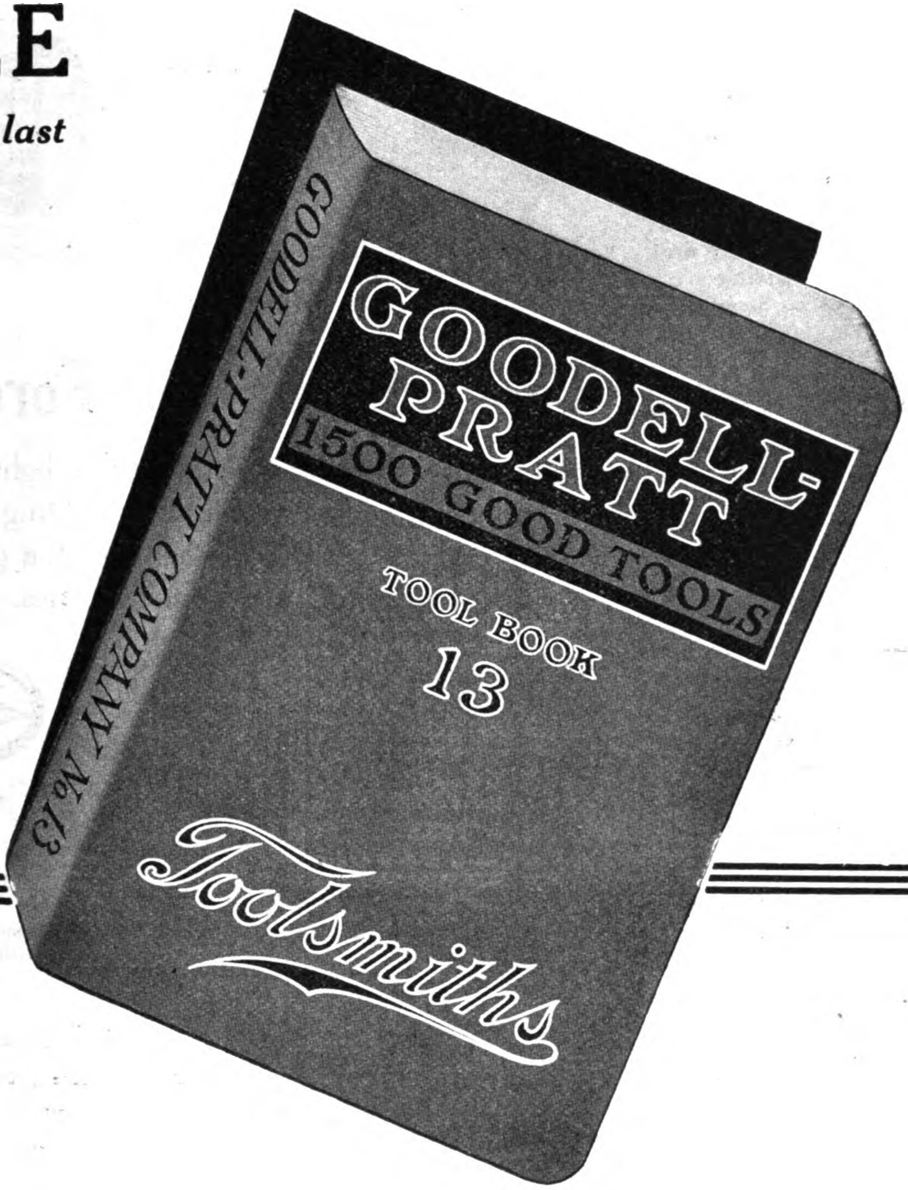
## BEARINGS SERVICE COMPANY

**General Offices Detroit, Michigan**

*New York*
*Boston*
*Chicago*
*Los Angeles*
*Atlanta*
*Dallas*
*Detroit*
*Seattle*
*San Francisco*
*Kansas City*
*Philadelphia*
*Cleveland*
*Minneapolis*
*Indianapolis*
*Rochester*
*Denver*

# FREE

*while they last*


GOODELL-PRATT
1500 GOOD TOOLS
TOOL BOOK
13
Toolsmiths
GOODELL-PRATT COMPANY No. 13

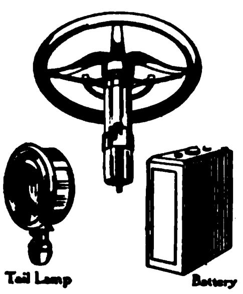
OUR Book of Good Tools has just been received from the printers. It is revised and enlarged, giving full particulars about every tool that we manufacture.

Think of having in this convenient pocket form this handy reference book of tools thoroughly indexed! You need some odd tool—wonder where to get it—and you find it listed with full particulars in this 432 page book.

There is a copy waiting for you, but if you don't write now, you may not get it.

**GOODELL-PRATT COMPANY**

**Greenfield,** *Toolsmiths* **Mass., U. S. A.**



## ELECTAILITE

## $7.85

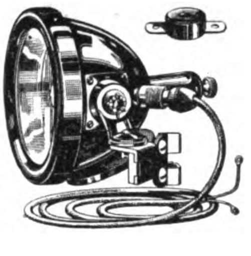
**Electric Tail Light with battery and wiring**
**Switch on Steering Post**

VERSAL PRODUCTS
UNIVERSAL CAR

## DYNOLITE

## $6.85

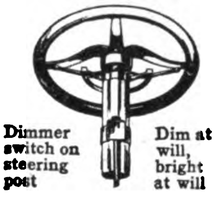
**Spotlight for Ford cars with regulator to enable current to be taken from magneto**

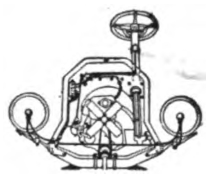


# The Famous Versal Products for the Ford Car

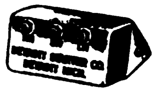
Over a million and a half Ford cars now in use are unequipped with electric lighting except through magneto. These products provide complete and perfect electric lighting from head light to tail light at prices a Ford owner wants to pay. An unlimited market, a guaranteed, low priced, nationally advertised line,—assured, immediate, and profitable sales.

**Extra 24 c.p. Nitrogen bulbs**


Dimmer switch on steering post
Dim at will, bright at will



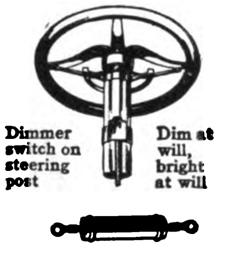
**Showing wiring method used with Constolite**



**Constolite**

## SEMIBRITE $1.85

Here is a simple yet practical and very efficient device with control switch. Resistance coil acts as dimmer—is extremely convenient for night driving—meets law requirements. Is complete with necessary wiring—intallation in ten minutes.


Dimmer switch on steering post
Dim at will, bright at will

**A dimming device with steering post control switch**

**CONSTOLITE $4.85** Perfect Head Light control with nitrogen bulbs. For night driving satisfaction is unequalled. Gives full driving light at practically all speeds. Dimming switch on steering post to dim head light when car is running at any speed. Saves bulbs, insures keeping within the law.

**SPEEDERATOR $2.85**—**Here's a device of vast importance**

Speederator automatically accelerates the speed of the Ford motor on low and reverse speeds, independently of any extra movement of foot speed, changing pedals or hand throttle. It further automatically retards the motor speed while changing from low to high gear, thereby preventing the engine from racing.

It eliminates entirely all otherwise necessary operations of steering post throttle on any speed, even while changing speeds, and leaves the hands absolutely free to operate horn and steering wheel.

We claim the following advantages and conveniences for Speederator on Ford cars:

1st. It eliminates the necessity of all operations of the steering post throttle.
2nd. It automatically speeds up the engine in changing speed.
3rd. The car speed in starting and reversing is at all times proportional to pressure exerted on the low or reverse speed pedals.
4th. Engine positively will not "stall."
5th. It automatically increases the speed of the engine at exactly the right time, eliminating the wear and tear on the bands, thereby increasing their life many times.
6th. It offers approximately a 15% saving in total gasoline consumption, by its feature of cutting the motor to idling speed between each speed changing operation and shifting.
7th. It possesses all the conveniences of a foot throttle control such as are found on all high priced cars.
8th. The beginner can control the car forward or backward as quietly and smoothly as the expert driver.

Speederator is silent, simple to install, can be assembled on the car in twenty minutes—all parts are accurately made—no fitting or machine work required; *not even a hole to drill.*

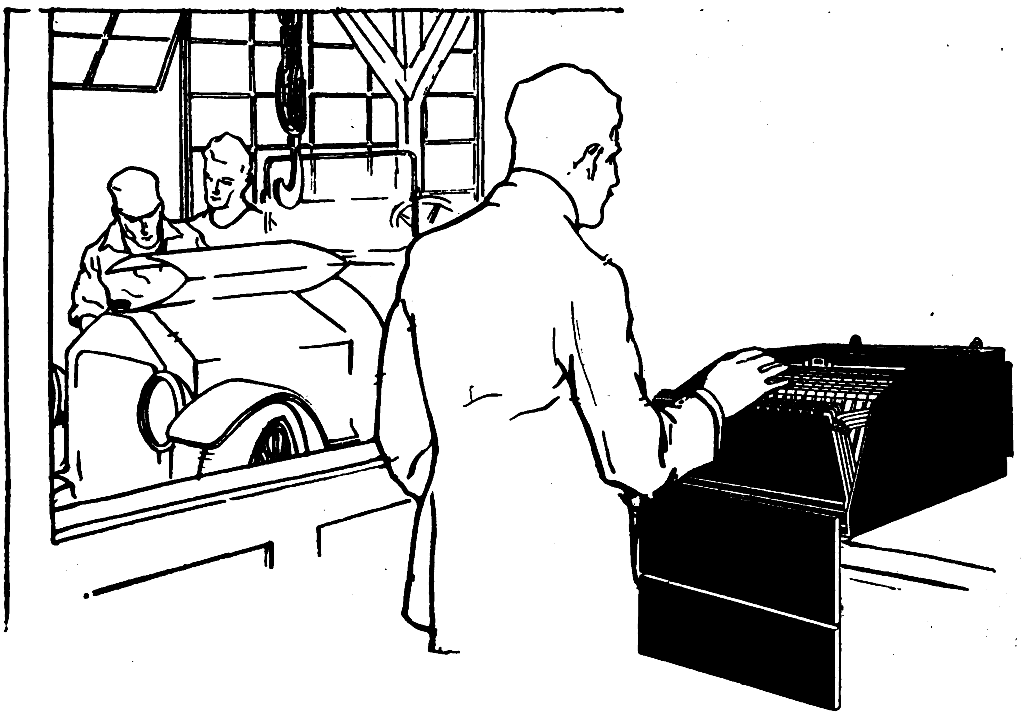
**DYNOLITE** is a beautifully made, powerful spotlight designed exclusively for Ford cars, having patented focusing device and mirrorscope. It operates from the magneto and through our patented regulating device meets perfectly the voltage fluctuations of Ford cars, thereby giving the Ford owner a positive search ray, and when switched on Dynolite automatically dims the two head lamps at all motor speeds—a decided advantage.

**ELECTAILITE** is one of the most popular of low priced electric accessories. Provides neat and attractive tail light to replace kerosene lamp,—includes storage battery (for one month's running without recharging) switch on steering post and all necessary wiring. Can be operated for one-half cent a day.

**Ford Electric Lighting Systems and Equipments as supplied by us: Genolite is a generator-storage battery system in various styles. Type H lights head lamps and tail lamp from battery, price $38.85. Type D lights the sides and tail lamp from the storage battery, while the spotlight and regulator are connected with the magneto, price $31.85. Type C lights side lamps and tail lamp from the battery and head lamps from the magneto, price $29.85.**

***The Speederator is Positively Covered by Basic Patents***

**THE DETROIT STARTER CO., Detroit, U.S.A.**
**Our reputation is your guarantee**



**A simple, complete system for keeping customers' accounts**

***The National Cash Register Credit File***

Cuts out all bookkeeping—avoids all errors. Saves time—saves effort—saves money.

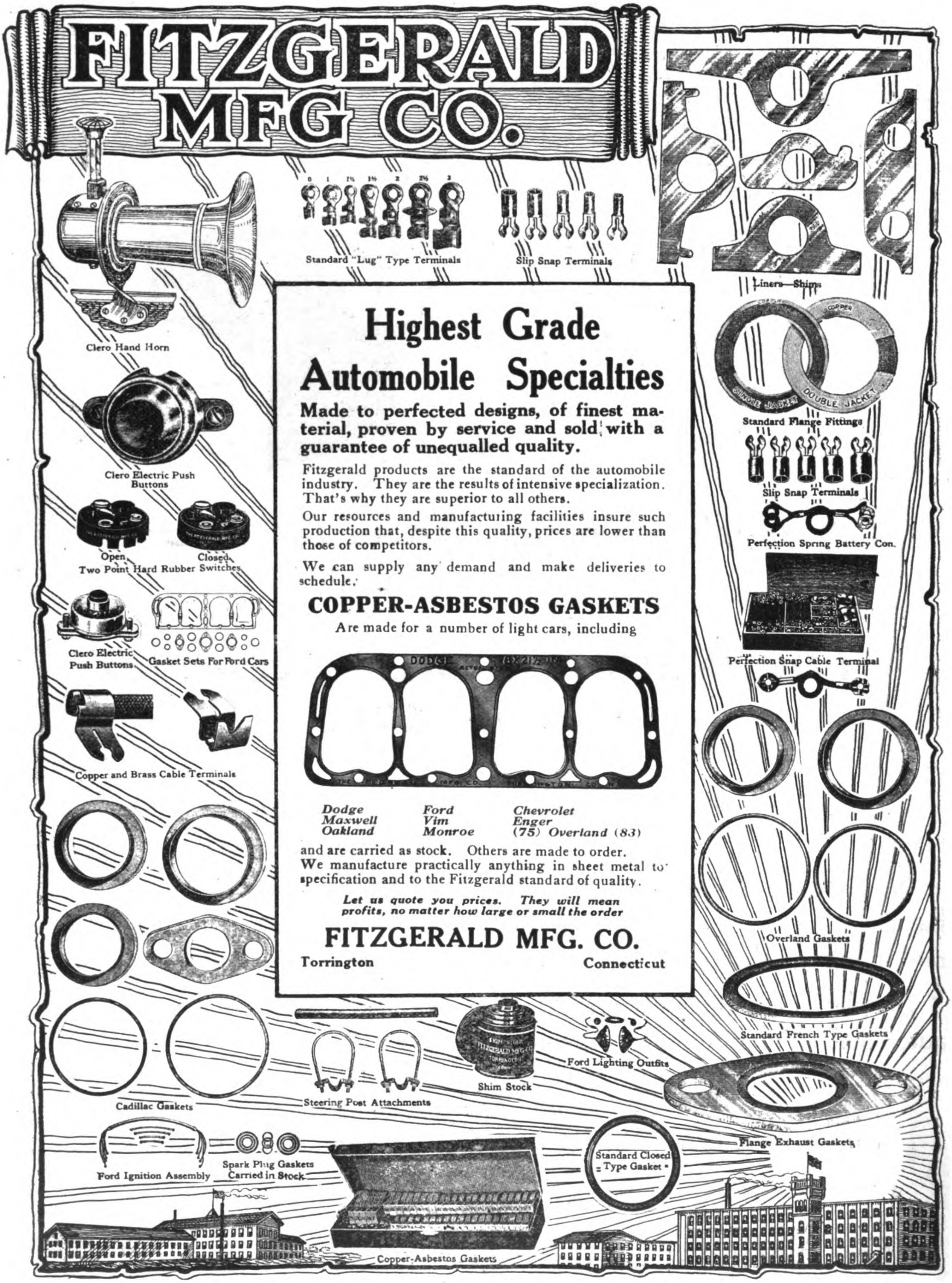
No ledger—no more forgotten charges. Keeps every customer's account balanced to the minute and ready for immediate settlement. Gives an accurate statement any time one is wanted.

Simple and complete. Easy to operate. The ideal credit file system for automobile dealers and garage men.

*Do not waste time, effort and patience doing the work a machine can do for you. Write to us for literature on the Credit File.*

**Address Department 36**

**The National Cash Register Co., Dayton, Ohio**


FITZGERALD MFG CO.
Clero Hand Horn
Standard "Lug" Type Terminals
0 1 1¼ 1½ 2 2½ 3
Slip Snap Terminals
Liners—Shims
Clero Electric Push Buttons
Copper
Single Jacket
Double Jacket
Standard Flange Fittings
Slip Snap Terminals
Open
Closed
Two Point Hard Rubber Switches
Perfection Spring Battery Con.
Clero Electric Push Buttons
Gasket Sets For Ford Cars
Perfection Snap Cable Terminal
Copper and Brass Cable Terminals
Overland Gaskets
Standard French Type Gaskets
Ford Lighting Outfits
Shim Stock
Cadillac Gaskets
Steering Post Attachments
Flange Exhaust Gaskets
Standard Closed Type Gasket
Ford Ignition Assembly
Spark Plug Gaskets Carried in Stock
Copper-Asbestos Gaskets

# Highest Grade Automobile Specialties

**Made to perfected designs, of finest material, proven by service and sold with a guarantee of unequalled quality.**

Fitzgerald products are the standard of the automobile industry. They are the results of intensive specialization. That's why they are superior to all others.

Our resources and manufacturing facilities insure such production that, despite this quality, prices are lower than those of competitors.

We can supply any demand and make deliveries to schedule.

## COPPER-ASBESTOS GASKETS

Are made for a number of light cars, including

| | | |
|---|---|---|
| *Dodge* | *Ford* | *Chevrolet* |
| *Maxwell* | *Vim* | *Enger* |
| *Oakland* | *Monroe* | *(75) Overland (83)* |

and are carried as stock. Others are made to order. We manufacture practically anything in sheet metal to specification and to the Fitzgerald standard of quality.

***Let us quote you prices. They will mean profits, no matter how large or small the order***

**FITZGERALD MFG. CO.**

**Torrington** **Connecticut**

# More money for Garages

How often are you called on to locate and correct trouble in Electrical Starting and Lighting Equipment? You are bound to have more and more of such calls, especially if you earn a reputation for knowing the electrical side of an automobile and handling it right.

There is money in Electrical Installations, Repairs, Adjustments, Renewals, etc. Some of the most wide-awake Garage Men have found it out. This year, more money than ever before will be made that way, because there will be more electrical work than ever for the man who knows how.

Guesswork won't do. Every time you guess wrong, you are likely to make yourself a peck of trouble and lose a customer in the bargain. What you need, and need right now before you find yourself losing opportunities to make money, is a

## Weston

### Model 280

## GARAGE TESTING INSTRUMENT

This complete Electrical Testing Equipment is made by the world's foremost Electrical Instrument designers and makers. It meets every requirement for making electrical tests for the garage. With this WESTON MODEL 280 you can handle anything that comes your way in electrical work. And it doesn't cost a small fortune, either—mighty little for what it will let you make.

With the instrument, we furnish full information showing you how to use it And we have a staff of electrical experts whose advice is yours for the asking any time you think you need it.

**We Will Make You a Worth-While Offer**

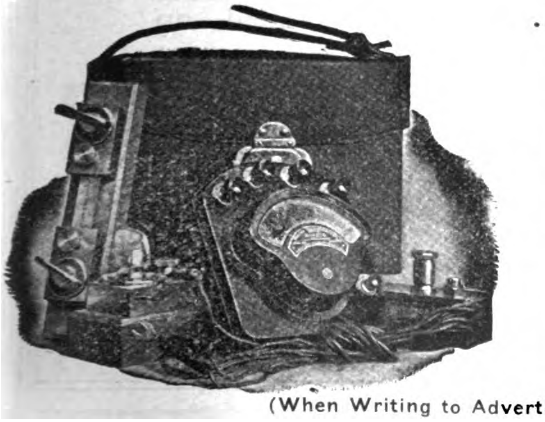
It includes not only the Instrument but Special Service Features which will put you in a position to make the most of this rapidly growing and very profitable business. There is a limit to the number of garages to which the offer can be made, so don't put off looking into it. Write today for full particulars.

**WESTON ELECTRICAL INSTRUMENT CO.**
**103 Weston Ave., Newark, N. J.**
*23 Branch Offices in the Larger Cities.*

Do you want to be able to make quick, accurate tests to locate any defect in the electrical system? Or do you want to consume unlimited time taking apart every device and running a chance that you will discover the trouble sooner or later?

There are scores of places where trouble may occur. Unless you test electrically, you cannot eliminate any possible source of trouble without taking each device apart.

A poorly made, inaccurate electrical instrument merely adds to the uncertainty. What you need is reliable, positive knowledge. This Model 280 really is the equivalent of six separate measuring instruments of different ranges. It is extremely accurate, durable and serviceable. With it, you can do the work quickly and intelligently, putting yourself a long way ahead of any competitor who has not Weston Equipment.



THE MARK

OF QUALITY

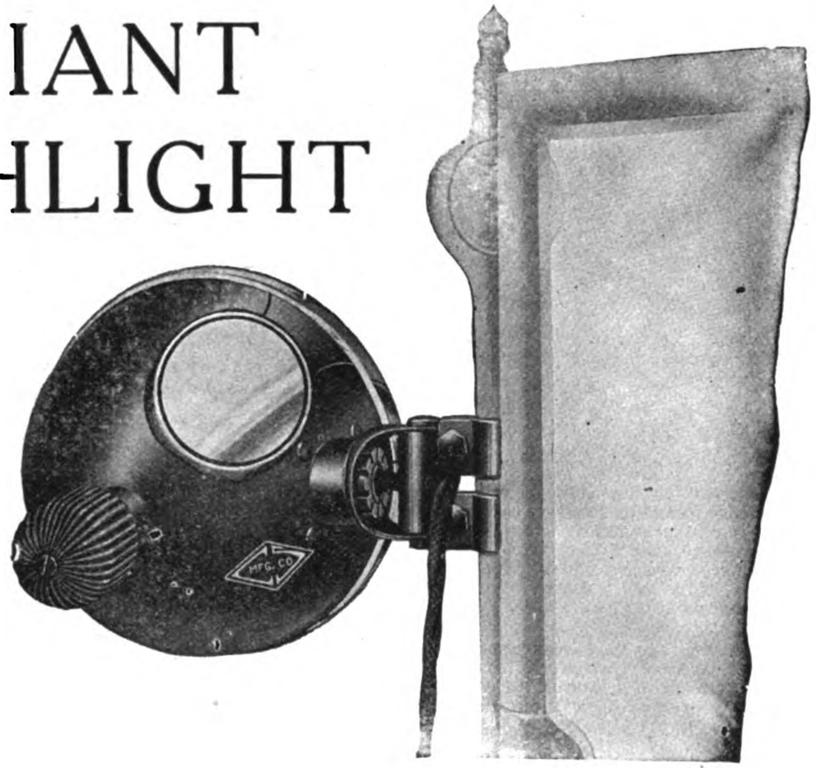
# Just as Much Light at Night—Next Fall

**Any windshield searchlight installed this spring will dispel night shadows and gloom—for a month**

**But after that?**

**"Staying Qualities" are prominent in the**

## C-S GIANT SEARCHLIGHT



**A powerful, unwavering light this spring—the same powerful, unwavering light next fall.**

**New England made—materials chosen to successfully combat insidious corrosion which dims ordinary lights.**

**A brilliant shaft of light just where needed—on gutter or ruts in the road—on ditches and bushes—on guide board or house number.**

**More light for every night-driving need with the C-S Giant Searchlight.**

*Most Hardware Dealers, Accessory Dealers and Garages sell C-S Giant Searchlights. If yours doesn't, write us direct and we will gladly help you get one.*

LIST PRICES

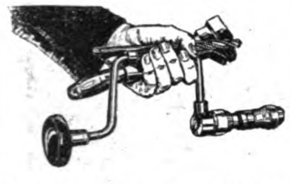
With Mirror, $6.

Without Mirror, $5.

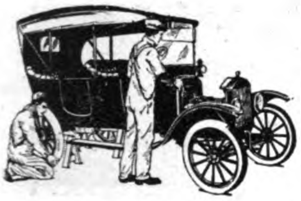
**CULVER-STEARNS MFG. CO.**

WORCESTER, MASS. DETROIT, MICH.

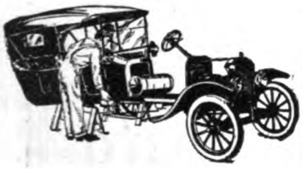
# MAXFER



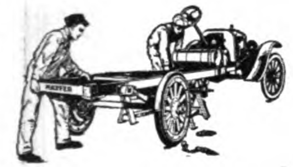
Tools used to make a **MAXFER** TON TRUCK



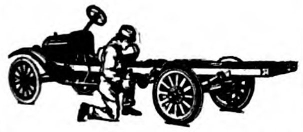
Removing Ford rear wheels



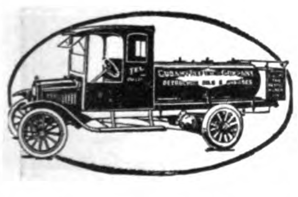
Taking off the body



Making a **MAXFER** one ton truck

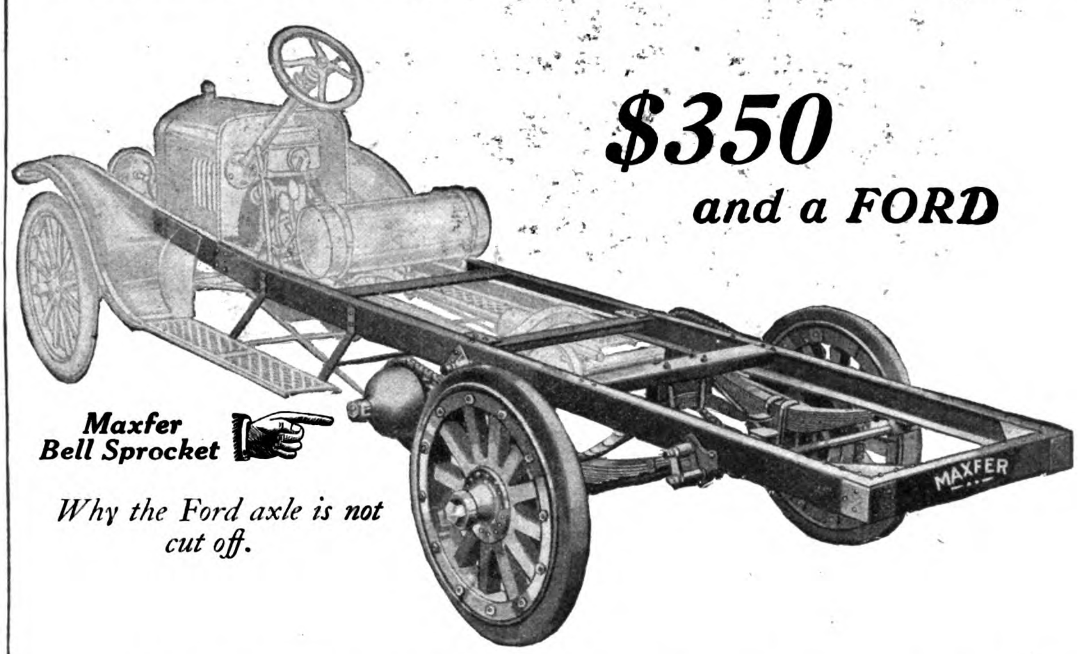


Putting on **MAXFER** Bell sprocket



**MAXFER**
*THE WHALE FOR WORK*
**TON TRUCK**

## Fastest Selling Truck Ever Produced



***$350***

***and a FORD***

***Maxfer Bell Sprocket***

*Why the Ford axle is not cut off.*

A MAN is known by the record he makes. A truck is known by the record it makes. In the last nine months the Maxfer Company have added over 1100 dealers.

The reason for this, is that the Maxfer is the most economical, easiest and quickest method ever invented of making a one-ton truck from a Ford. The Maxfer truck maker does not require you to cut off the axles, does not require you to cut off the frame. When you have finally completed the change of a Ford into a Maxfer one-ton truck, you have the best selling proposition ever offered to a dealer.

We are proud to say that we have the largest distributors of trucks in the United States as our dealers — and more are coming into our organization every day. You cannot afford to stay out of the Maxfer organization if you handle trucks.

Maxfer makes a Ford, used or new, into a one-ton truck, at $350. It slips around and over the Ford frame, strengthening it all the way.

*Write or wire to us and find out whether your territory is open. We have some good territory still left. Our dealers have sold 12,000 of these trucks in nine months.*

**Maxfer Truck and Tractor Co.**
**908 So. Michigan Avenue**
**CHICAGO, ILLINOIS U. S. A.**

**Maxfer Truck & Tractor Co.**
**908 Michigan Ave., Chicago**

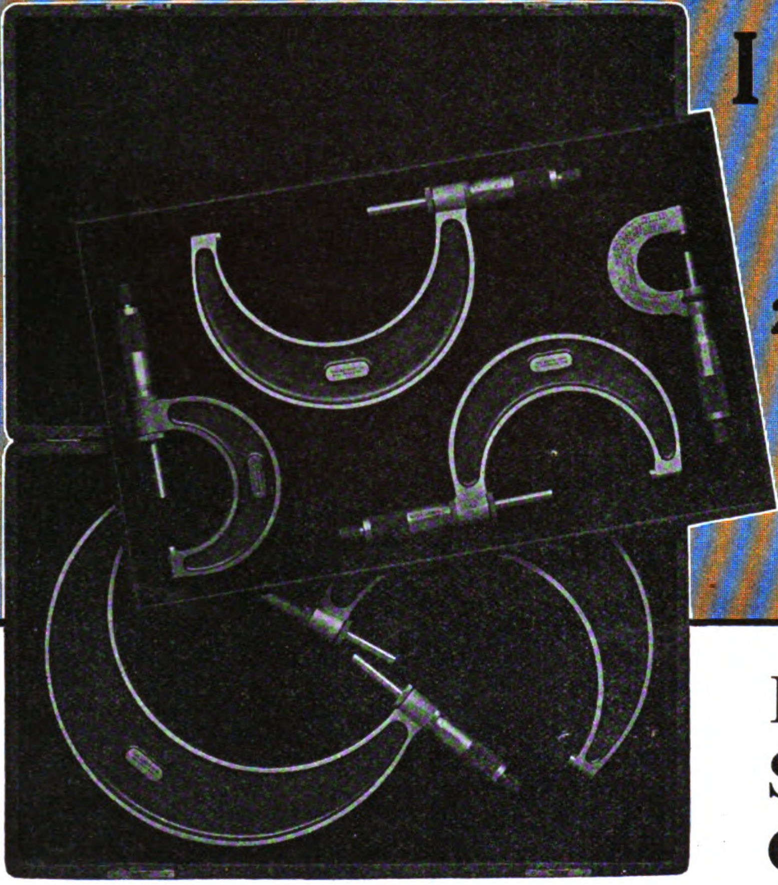
Please mail to me full particulars of the Maxfer Truck.

Name ..........................................

Street ..........................................

City .............................. State ............

# Starrett Micrometers



## IN SETS

**Sizes 1″–6″**

or

**25 mms to 150 mms**

**Furnished with or without velvet lined leather cases.**

## For Service Stations and Garages

To keep the quality of your repair work up to the high standard of the original construction you should employ the ***standard*** measuring instruments.

In the automobile industry the recognized standard for quality and accuracy is

TRADE MARK

# Starrett Tools

REG. U.S. PAT. OFF.

A good equipment for service stations and garages includes Starrett micrometers of various sizes, height and depth gages, surface gages, thread gages, calipers and dividers, etc.

Starrett Hack Saws are suited to every kind of metal cutting.

Write for free catalog No. 21 GT describing 2100 styles and sizes of measuring instruments and hack saws.

For sale at good hardware stores.

**The L. S. Starrett Co., Athol, Mass.**

World's Greatest Tool Makers.

New York London Chicago

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ASTOR, LENOX AND
TILDEN FOUNDATIONS
1919

# The ACCESSORY and GARAGE JOURNAL

Devoted Exclusively to the Automobile Trade and Allied Interests.

VOL. VII. PAWTUCKET, R. I., MAY 1917. No. 1

## Auto Industry Saved from Confiscatory Revenue Tax

### Protest to Congress Halts Proposed Five Per Cent. Flat Levy on Selling Price.

The storm of protest raised throughout the country against the proposed five per cent. flat tax on the selling price of automobiles has been effective in having the clause rejected by the Senate from the revenue bill. No definite substitute has been settled upon as yet, but sentiment seems to favor the application of a general tax affecting all automobiles, including those in use and every one sold. This tax, which would be assessed according to the value of a machine, would be more equitable, as it would spread the burden of the revenue over some 4,000,000 odd owners instead of the 1,500,000 new buyers this year. Text of the brief filed in the Senate hearing by the National Automobile Chamber of Commerce is on page 24 of this issue.

### DEFENSE COUNCIL NAMES AUTOMOTIVE COMMITTEE.

The National Defense Council has appointed an automotive committee with Col. Charles Clifton as its chairman. The committee will advise on all matters in connection with the use of internal combustion engines, including the production of motor cars and trucks, military tractors, motor boats and airplanes. The connection with the government will be established through the committee on munitions.

The other members of the committee are: C. W. Stiger of the Motor and Accessory Manufacturers, Inc.; Frank H. Russell of the Aircraft Manufacturers Association; C. F. Clarkson, H. J. Horning, Henry R. Stuphen and K. W. Zimmerschied of the Society of Automotive Engineers.

### POLACK MOVES QUARTERS.

The Polack Tyre and Rubber Company has moved its general and sales offices in New York to new quarters on the second floor of the Motor Mart, 1876 Broadway. The new quarters are much larger than those formerly occupied and have a good frontage on both Broadway and 62nd street.

### GOVERNMENT GETS GLOBE TRUCKS.

Walter F. Sheehan has taken charge and is general manager of the Globe Motor Truck Company. G. T. Schaefer has been appointed chief engineer of the Globe Motor Truck Company. He was formerly chief engineer of the Mogul Truck Company. The Globe Motor Truck Company is placing a full line of one, 1½ and two-ton trucks for the United States government.

### GENERAL MOTORS OF N. J. RETIRES PREFERRED STOCK.

The stockholders of the General Motors Company recently voted to retire all of the preferred stock of the New Jersey company, which action practically places the entire ownership of the big motor corporation in the hands of the General Motors Company of Delaware, which is capitalized at $102,000,000.

## United Motors Will Give Service on Electric Units

### Subsidiary Corporation Formed Includes Branch System for Delco, Remy and Klaxon.

The United Motors Service, Inc., recently formed, will give service throughout the country on the various electrical units manufactured by the subsidiaries of the United Motors Corporation, including Delco and Remy systems and Klaxon products.

A station has already been opened in Chicago and New York. Ralph H. Lane, formerly engineer of the Hyatt Roller Bearing Company and president of the Bearings Service Company, is head of the United Motors Service, Inc. When the service stations are installed in different cities, stations already maintained by either of the three companies whose products are represented will be discontinued.

## Gasoline Production Declared Serious Problem

### Government Mine Director Asserts High Water Mark Reached in Crude Oil Output.

Van H. Manning, director of the United States Bureau of Mines, in the course of an address on "The Petroleum and Gasoline Situation," delivered before the Editorial Conference of the Business Publishers Association in Washington on May 25, declaring that the production of petroleum in this country last year was thought to have reached the high water mark, advocated repressing of crude oil burning and other conservation measures.

His address in part was as follows:

"To us who have looked into the insides of this problem the situation is serious. I wish to imprint the thought that any remedy that can be applied to the petroleum and gasoline situation will come through conservation, which does not mean tying up, but a wiser use of what we have.

"In the year 1916 there were 2,750,000 automobiles, or an increase over the year 1910 of 2,350,000.

"The increased number of automobiles in 1916 used 1,000,000,000 more gallons of gasoline, or 28,000,000 barrels more than the automobiles in 1910.

"This increased use of gasoline for the increased number of automobiles alone represented a little more than half of the total output of gasoline in the country in 1916 for all purposes, the total production being about 54,000,000 barrels. And when you realize that the number of automobiles is increasing with each day, you can grasp what a tremendous problem is this feature alone.

"The total gasoline engine horsepower built and sold in the United States in 1913, according to the Federal Trade Commission, was 11,200,000, and in 1915 the output had a little more than doubled, the figures being 22,500,000. Just think of it, an increase in gasoline horsepower of 100 per cent. in two years' time.

"The apparently unsolvable puzzle about this is that while we have been increasing our production of gasoline, the production of automobiles has increased 200 per cent. above the increase in gasoline production. These are the facts that we must face. Where is it going to end?

"Statistics indicate that of the gasoline produced in the United States, between 55 per cent. and 60 per cent. is used in the automobiles of the country; 20 per cent. to 25 per cent. is exported, and the balance is used in stationary engines, in motor boats, tractors and for various purposes of minor importance.

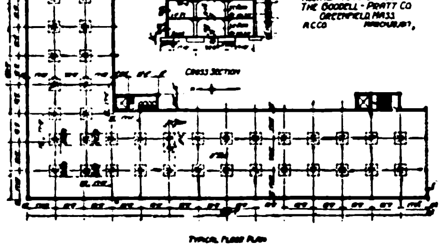
"During 1915 the normal consumption of crude petroleum was 12 per cent. greater than in 1914; and last year our consumption exceeded the 1915 consumption by 13 per cent. Estimating that the normal peace consumption for this year will increase at the same rate, or 13 per cent., our consumption for 1917 will exceed that for 1916 by about 40,000,000 barrels. This does not take into consideration the increased demand for petroleum and its products, due to the entrance of this country into the war. Although this increased demand because of the war is difficult to estimate, obviously the increased use for various war purposes will greatly enlarge our consumption above the rate which prevailed during times of peace. The production of crude petroleum in this country during last year is thought to have reached high water mark, and it is very likely that the production for 1917 will be smaller than it was last year. If the normal and war demands for petroleum can be filled, the difference between the estimated production and consumption during this year will amount to probably as much as 60,000,000 barrels, an amount which must be drawn out of storage.

"The cracking of petroleum last year furnished 7½% of the total gasoline production and can be and is being developed and installed rapidly in most of the larger fields of the United States. Its possibilities are enormous."

### GOODELL-PRATT COMPANY MAKES BIG ADDITION.

The Goodell-Pratt Company, Greenfield, Mass., tool manufacturers, will place their new machine shop in operation in the near future. This latest addition to the big plant, which is nearing completion, is four stories in height, and of reinforced concrete construction throughout. It will be 58x260 feet, with a four-story ell 58x110 feet. This will increase the floor area of the company's plant by about 86,072 square feet.

As shown in the accompanying sketch, columns of mushroom type, 24 inches in diameter are used for the basement, those 22 inches in diameter for the first and second floors and 16-inch columns for the third and top floors. The total cost of the building will be approximately $135,000.



Floor Plan Addition to the Goodell-Pratt Co. Factories, Greenfield, Mass.

# *Big Sales Increase Reported by the Chandler Co.*

### Pierce-Arrow Declares Initial Dividend on Common Stock—Keystone April Earnings Large.

The Chandler Motor Car Company, Cleveland, O., has declared the regular quarterly dividend of two per cent. and the usual extra quarterly dividend of one per cent.

A report read at the directors' meeting showed that there was an increase in business in the period from Jan. 1 to April 30 this year of 134 per cent. over the corresponding period in 1916, and an increase in profits for the period of 182 per cent.

The Pierce-Arrow Motor Car Company, Buffalo, N. Y., has declared an initial dividend on its common stock of $1.25 a share. The usual quarterly dividend of $2 a share on the preferred stock has also been declared. For the four months ending April 30 last, after deducting all expenses and accrued taxes, except taxes on excess profits, the earnings were as follows: Net operating profits, $1,502,833; less interest, $5257; profits before depreciation, $1,497,576; depreciation, plant and equipment, $156,444; net profits, $1,341,132.

The Keystone Tire and Rubber Company made net earnings for the month of April amounting to approximately $75,000. The month was the best in the company's history, yet the earnings for the present month will surpass it.

### KISSEL BEGINS SERIES OF ADVERTISING CHATS.

Ralph Kaye, the newly appointed advertising manager of the Kissel Motor Car Company, has just issued Kissel Advertising Chats No. 1. Mr. Kaye says there was never a time when advertising can count for so much as today—provided it is conducted along the right lines.

"There is absolutely no doubt about it," he says. With the factories and industries of the country breaking all records, with the wholesalers and jobbers doing a record business and with billions of dollars about to be spent in the United States, it is no time for automobile dealers to curtail their investment in the buying impulses of the prospective car purchasers in their city or town."

Frank E. Barnes.

### F. E. BARNES TO PRODUCE EAGLE CARS.

Frank E. Barnes, a veteran in the automobile industry and recently superintendent of the King Motor Car Company, has been appointed production manager of the Eagle Macomber Motor Car Company of Sandusky, O., makers of the Eagle car, which is fitted with the Macomber air cooled rotary motor.

### CHANGES ANNOUNCED IN METZ SELLING FORCE.

Edwin Metz, son of Charles H. Metz, president of the Metz Motor Car Co., Waltham, Mass., makers of the Metz car, has been appointed to the position of assistant of the president. E. L. Bunker, formerly sales manager of the company in Maine, has been appointed head of the retail sales department at Waltham and C. I. Pickens, son of General Sales Manager Roscoe A. Pickens, has been appointed office manager of the retail office. J. V. Gormerly, formerly sales manager of the company in Georgia, will also join the Waltham sales forces. He will be succeeded in the South by J. B. Rama, formerly state manager of Alabama, who will hereafter handle sales distribution in both that state and Georgia. A. S. Rowe, formerly sales manager in Western Pennsylvania, will take the Maine territory formerly managed by Mr. Bunker.

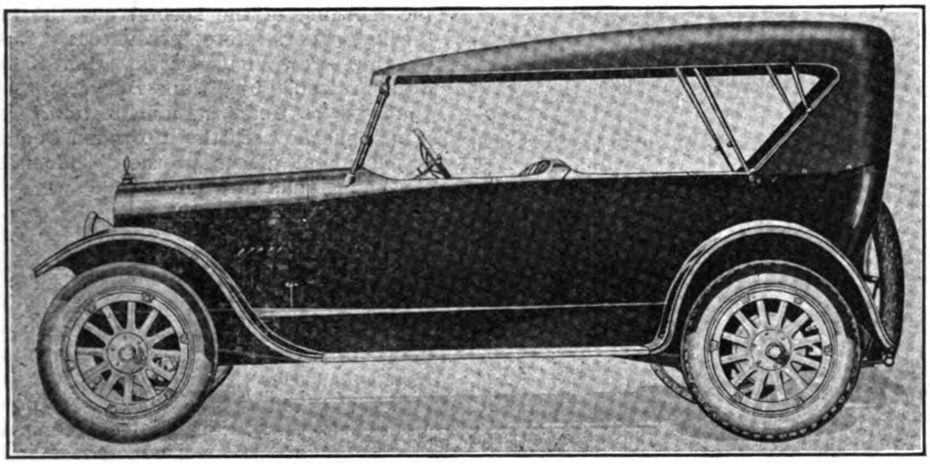
### COLE PAYS PREMIUM FOR LIBERTY BONDS.

The Cole Motor Car Company, Indianapolis, Ind., has offered a premium of $2 on each $100 Liberty Bond when said bonds are turned in as part or whole of the purchase price of a Cole car. The customer making a purchase on this basis is also given an opportunity to redeem the bonds whenever convenient.

### LAVINE GEAR CO. ENLARGING.

The Lavine Gear Company, Racine, Wis., have foundations completed for the addition to their plant.

# ABBOTT ANNOUNCES NEW MODEL



**Abbott Six-Cylinder, 60 Horsepower Touring Car, with Continental Motor, All Metal Body, Mahogany Cowl. Priced at $1595.**

The Abbott Corporation, makers of the Abbott car, having recently transferred its plant from Detroit to Cleveland, O., has announced a new model, a six-cylinder car of 60 horsepower, which will be marketed in the near future.

The new car, which will be known as the "6-60," and which will sell for $1595 for the touring car model, will stand out prominently among the other sixes now on the market. A Continental motor is used with a Warner transmission. An all-metal body of special design, with mahogany cowl, genuine leather upholstering, nickeled copper instruments, distinguishes it as to appointments.

An advance of $100 has been made in the price of the 6-44 model Abbott touring car and $45 in the price of the 6-44 clubster, making the price of both models the same, $1295, which price becomes effective after May 25.

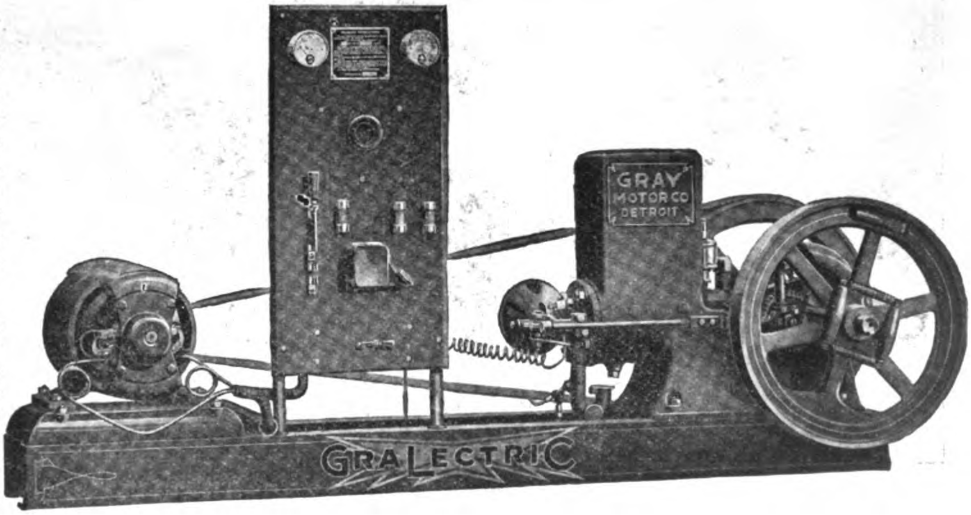
## GRALECTRIC INDIVIDUAL LIGHTING PLANTS.

Garages located along country roads, as well as others in communities more accessible to electric lighting circuits, will be specially interested in the New GraLectric lighting plants made by the Gray Motor Company of 435 Oakland avenue, Detroit, Mich. Wherever the cost of electric installation is heavy or the price of current prohibitive, there is a call for individual lighting plants. Not only is the system to be considered on account of its convenience and low cost, but also because of its adaptability, in that the power plant may be used for other work than that of lighting without detracting from the efficiency or operation of the lighting plant.

This system consists of three units, the power plant, the generator and the storage battery. The power plant is a single cylinder, water cooled gasoline engine of the horizontal type, equipped with jump spark ignition, an automatic governor, sight feed oiler, muffler and drive pulley from which may be driven, by belt, small machinery of many kinds. The flywheel is belted to the generator, which furnishes 30 volts and has a capacity of from 40 to 60 lights according to size. Both the power plant and generator are mounted on a heavy steel subbase, so that no aligning of the parts is necessary when installing the plant, nor is a concrete foundation required.

The third unit is the storage battery, which is kept charged from the generator and from which is taken the lighting current and current for ignition. This unit also supplies current for starting the engine when the starting switch on the switchboard is thrown in.

With this system the current may be taken from the batteries alone, running the engine only when it is necessary to recharge them from the generator; from the batteries while the engine is running, and from the generator alone with the batteries floating on the line.



**GraLectric Lighting Plant, Showing Dynamo and Generator Compactly Lined up on One Base, on Which Also the Switchboard Is Mounted.**

## FAWSCO COMBINATION CLEANER.

J. H. Faw, Inc., New York City, announces the Fawsco improved combination gasoline gauge, oil cock wrench and cleaner, as a tool that is one of the most needed by all owners of Ford cars. The claim is made for this tool that it will not only accurately measure the gasoline in the tank, but provide the only sure means of learning whether there is oil in the crank case, as the pin will prove if the oil cock is stopped up or the oil used up. This tool is made of coppered Bessemer steel rod, nickel plated and black enameled and is guaranteed to give complete satisfaction mechanically and profitably to both user and dealer.

Packed 12 in a heavy corrugated carton, one of them mounted on a display easel; balance in separate envelopes. They are not only attractive to owners and dealers, but jobbers will find them readily sold, easily shipped and quickly reordered.

**Manufactured by J. H. Faw, Inc., 41 Warren St., New York City. Retail price, 35 cents.**

## SEVENTY-THREE CAR TYPES AC EQUIPPED.

AC spark plugs, made by the Champion Ignition Co., Flint, Mich., are standard equipment on 73 out of the 196 types of 1917 cars, classified according to their selling price. These cars, listed according to price are as follows:

Under $500—Chevrolet and Saxon. $500 to $800—Buick, Chevrolet, Dodge, Dort and Monroe. $800 to $900—Oakland, Reo, Saxon and Scripps-Booth. $900 to $1000—Buick, Detroiter and Jackson. $1000 to $1100—Buick, Chalmers, Detroiter, Jeffery, KisselKar, Paige, Patterson and Pilot. $1100 to $1200—Hupmobile, Jackson, Jeffery, Lexington and Scripps-Booth. $1200 to $1300—Bour-Davis, Chalmers, Chandler, Davis, Jackson, Reo and Westcott. $1300 to $1400—Hupmobile, Jackson, Jeffery and Paige. $1400 to $1500—Haynes, Hudson, Stearns-Knight and Westcott. $1500 to $1600—Cole, Haynes, Oakland, Velie and Westcott. $1600 to $1800—Apperson, Jackson, Jordan, National, Pilot and Premier. $1800 to $2100—Apperson, Cadillac, Haynes and Peerless. $2100 to $2500—National, Pilot, Stearns-Knight and Stutz. $2500 to $3000—Daniels, Marmon and Packard. $3000 to $5000—Packard, McFarlan, Pierce-Arrow and Singer. $5000—Pierce-Arrow and Simplex.

# S. A. E. Will Discuss War-Planes

## War Department Head to Address the Summer Meeting—Papers of a Practical Type

AT THE May meeting of the Council of the Society of Autotomotive Engineers, held at the Washington headquarters in the Munsey building, plans for the summer meeting were completed.

Secretary of war, Newton Baker, has accepted an invitation to be present and address the engineers at the informal dinner which will be held in the banquet hall of the New Willard Hotel, Tuesday evening, June 26, the second day of the meeting of the members and guests.

The dinner will be the greatest get-together of the government officials and S. A. E. members in the history of the society. Over 30 guests, representing the Army and Navy from Washington will be present, and in addition the Council of National Defense and other organizations co-operating with the government at the present time are expected to be present at the sessions.

On Tuesday, June 26, the professional session will be held, at which papers will be presented of a practical type, and on subjects of interest to the members who are now working with the government.

Wing Commander I. W. Seddon, R. N. A. S., who is a member of the British commission in this country, and who is demonstrating some of the British types of war airplanes here, has agreed to present a paper dealing with the practical aspects of airplane manufacture. Major Rees, also of the British commission, an experienced British aviator throughout the entire Somme campaign, will answer questions on this subject.

W. Owen Thomas, consulting engineer of Detroit, will handle the matter of motor trucks in the European war. He has been head of military motor transport work for the Canadian government under Major-General Sam Hughes, former minister of militia for Canada. Mr. Thomas was on the French and British front for 14 months.

A practical paper on farm tractors will be presented by H. L. Horning of the Waukesha Motor Company. He has been co-operating with the Department of Agriculture demonstrating how the tractors in present use are averaging 48 days per year work, which is only one-third of their capacity. Plans are under way to show how farm tractors can be of great assistance to the government in solving the present food problem.

Henry R. Stuphen, vice president of the Elco Company, will represent the motor boat activities of the S. A. E., giving an illustrated talk on standardization methods and production plans used in building the 500 submarine chasers, which the country supplied to the British government. He will show three reels of moving picture films, covering the complete scope of the work.

The professional session will be held at the Bureau of Standards, as will also the Monday meeting of the Standards Committee, and an inspection of the various departments of the bureau has been arranged for beginning at 3 o'clock. It is also possible that special demonstrations of materials and of other work of the bureau will be arranged for at the time of this visitation.

Over 800 members of the society are expected to be present at the meeting and dinner.

### GEAR MANUFACTURERS' ASSOCIATION MEETS.

The American Gear Manufacturers' Association held its first convention at the Hotel Schenley, Pittsburg, Penn., on May 14 and 15.

The convention was opened by F. W. Sinram, president, with an executive session. In the afternoon of the first day S. L. Nicholson, sales manager of the Westinghouse Electric and Manufacturing Co., spoke on "The Ins and Outs of an Industrial Organization," and James E. Gleason presented a paper on "The Spiral or Curved Tooth Bevel Gear." On the morning of the second day the following papers were presented: "Job Gearing—To What Extent Can It Be Standardized," by Frank Burgess; "Advantages of Gear Standardization," by Wm. Ganschow. In the afternoon George L. Markland discussed the "Difficulties of Gear Standardization."

### ANNUAL MEETING OF ELECTRIC ASSOCIATION

The Automotive Electric Association held its first annual meeting at the Homestead Hotel, Hot Springs, Va., on May 17, 18 and 19. Members were present representing the following companies: Dayton Engineering Laboratories Co., Dayton, O.; Dyneto Electric Corporation, Syracuse, N. Y.; Electric Auto Lite Co., Toledo, O.; the Leece-Neville Co., Cleveland, O.; North East Electric Co., Rochester, N. Y.; Remy Electric Co., Anderson, Ind.; the Robbins & Myers Co., Springfield, O.; Splitdorf Electric Co., Newark, N. J.; U. S. Light and Heat Co., Niagara Falls, N. Y.; Wagner Electric and Manufacturing Co., St. Louis, Mo.; Westinghouse Electric and Manufacturing Co., Pittsburg, Penn.

In his report appointing various sub committees, the chairman of the standardization committee said that in view of the immediate prospect of the member companies being called upon to supply electrical equipment to the government for use on trucks and aeroplanes, an especially strong sub-committee had been appointed to consider questions pertaining to this work and to make such recommendations as may seem advisable from the standpoint giving the government the best and most prompt service possible.

The legal and patent committee reported upon efforts made to arrange some manner in which the patent situation could be amicably adjusted. It was stated that a preliminary investigation shows prospect of serious and extensive litigation involving many companies.

Group of Members of the Automotive Electric Association, Holding the First Annual Meeting of the Society at Hot Springs, W. Va., May 17, 18 and 19—Discussions on the Patent Situation, Equipment for Trucks and Aeroplanes Predominated.

# LEADERS SEE SUBSTANTIAL BUSINESS FOUNDATION

## Prosperity Considered Too Firmly Rooted to Have Been More Than Temporarily Disturbed by Joining in the War

**The consensus of opinion of men high up in the automobile trade and industry regarding the business outlook beneath the war clouds, is that there should be no great decrease in the volume of turnover or profits, if any. This opinion, however, is aside from that expressed as to the effect of the war tax measure imposing the heavy assessment against automobiles and tires.**

**E. C. Morse, Vice President Chalmers Motor Car Co., Detroit, Mich.**

**Many well known men in the trade, on the other hand, with their characteristic optimism, can see nothing but unbounded prosperity and a business boom as a result of the war. Some brief views are herewith given:**

H. M. Jewett, president of the Paige Motor Car Co.—What is making good times? Every factory in the country running to full capacity, every laboring man getting top-notch wages and every factory selling its product at a fair profit; every farmer getting top-notch prices for his grain and cattle. The people have the money and they want manufactured materials of all kinds.

Knowlton P. Drysdale—The colossal purchases made in this country by the European allies during the past two years have resulted in unexampled prosperity here. The individual who thinks that he is helping his country's cause by practising unwise economies can tend only to weaken rather than strengthen the situation.

E. C. Morse, vice president of the Chalmers Motor Co.—America will prove that prosperity can go hand in hand with war when waged with clear headed intelligence.

W. W. Webster, National Commissioner of the National Association of Automobile Accessory Jobbers—The "good times" business man is the one who can head a business when everything is running along swimmingly, with no trouble in sight. On the other hand, the "poor times" business man is blessed with reasoning powers and capable of looking at matters calmly and dispassionately, studying the future and discerning good business policies from wild cat philosophies and that sort of a man in business, like the one in battle, is the man who wins.

**A. F. Knobloch, General Manager of Cole Motor Car Co., Indianapolis, Ind.**

A. F. Knobloch, general manager of the Cole Motor Co.—Canada's experience in 1916 should answer the question as to what effect the war will have on the American automobile industry.

F. E. Moskovics, commercial manager of the Nordyke & Marmon Co.—We look forward with confident optimism into the future. We feel it the duty of every manufacturer of importance and standing to look upon things in the same light. If this is done the merchant will sell his wares and the public will have money to buy them.

G. M. Stadleman, vice president of the Goodyear Tire and Rubber Co.—Canada's purchase of 100,000 cars this year, with 1/15 of the population of the United States, is equivalent to our purchasing 1,500,000 automobiles, which is just about what this country will buy during 1917.

W. O. Allen, general manager of the Allen Motor Co.—I have every confidence of the American people doing what is right for the good of the country and convincing themselves of the wisdom of holding present prosperity by living a normal life and keeping industry alive.

John N. Willys, president Willys-Overland Co., Toledo, O.—It seems to me that the unprecedented era of prosperity of the past two years must be continued.

### WILLYS-OVERLAND PLANS MADE FOR YEAR.

Edwin B. Jackson, who joined the Willys-Overland organization last summer, was elected vice president of the company at a meeting of the directors which followed the annual meeting of the company.

**Edwin B. Jackson, New Vice President of the Willys-Overland Co., Toledo, O.**

John N. Willys was re-elected president of the company and the following were elected vice presidents: C. A. Earl, H. L. Shepler, Isaac Kinsey, James E. Kepperley and Edwin B. Jackson. Royal R. Scott was elected secretary and Frank K. Dolbeer treasurer.

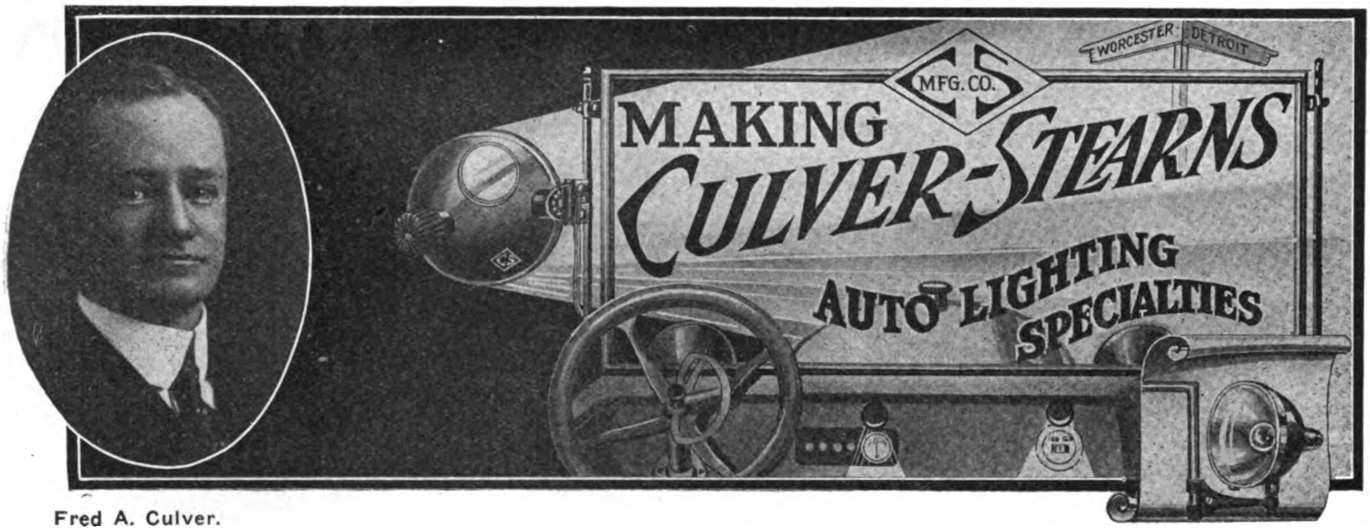
### WINNERS AT UNIONTOWN USE AC SPARK PLUGS.

AC spark plugs were a conspicuous factor in the Uniontown race meet, the first speedway contest of the season. Bill Taylor's Stutz, winner of the $10,000 trophy, was equipped with AC plugs, and in the dealer's race, Peerless, Haynes and Murray finished in the order named with AC plugs.

The Champion Ignition Co., Flint, Mich., has completed arrangements to increase the production of AC spark plugs from 60,000 to 80,000 daily, and further factory additions are being planned to bring the production to a higher figure to meet the demand.

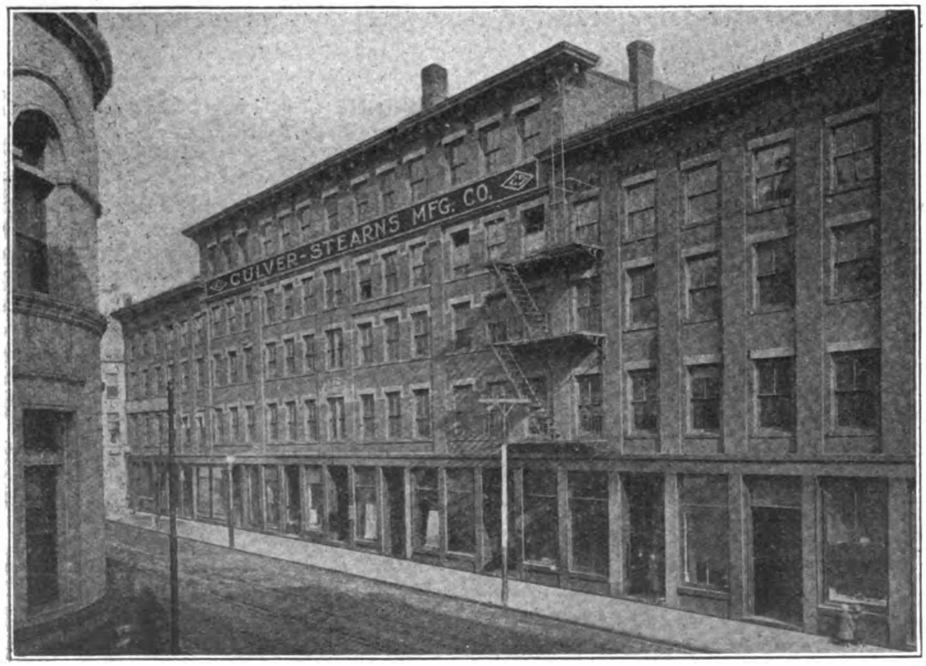
### RUSSEL INSTALLS BONUS SYSTEM.

The Russel Motor Axle Co., Detroit, Mich., has installed a bonus system of 10 per cent. additional to the monthly wages of employees qualifying under the plan.



Fred A. Culver.

OPERATING in the centre of the city of Worcester, Mass., a manufacturing community which prides itself as being the "Heart of the Commonwealth" and is particularly notable in its productions in the metal trades, the plant of the Culver-Stearns Manufacturing Company, makers of automobile lights and automobile lighting specialties, is both distinctive and distinctively interesting. The plant of the company is in a spacious brick structure on Southbridge street, opposite the Worcester post-office, and without doubt it is one of the busiest places in the whole busy city. Furthermore, the Culver-Stearns Manufacturing Company, turning out as it does large and small wares for vehicle electric lighting by the hundreds of thousands, and employing more than 200 operatives in placing together the manifold parts which go to make up these articles, represent a business of magnitude that ranks foremost among the producers in their line and means that it is a most important industry both to the city of Worcester and to the automobile world.



Manufactory of the Culver-Stearns Mfg. C o., Makers of Auto Electric Lighting Specialties, Southbridge Street, Worcester, Mass., Employing More Than 200 Operatives in the Production of Their Specialties.

While New England did not develop its manufacturing business in the automobile industry as rapidly as the Middle West, although it was a pioneer in that industry, yet in the matter of furnishing accessories, equipment, parts and tools for building automobiles, its famous machinists and machine shops have kept for it a large place in the motor car industry. And in this development the activities of the progressive Culver-Stearns Manufacturing Company has played no small part. This company turns out annually hundreds of thousands of pieces of electric lighting equipment for automobiles. It specializes in this one particular line. It makes complete lamps and it makes parts. It has mechanical and electrical experts in its employ who devote their entire time and attention to designing and developing new, advanced ideas in the manufacture of lighting equipment.

### Working Plant Extensively Equipped.

The plant of the company is extensively equipped for the production of these goods and particular stress is given to points of material selection and workmanship. The enormous production of the Culver-Stearns plant, its unequalled manufacturing facilities and its highly trained workers permits the sustained output of C-S high standard goods at popular prices. All material entering into the production of Culver-Stearns goods is of the very best quality. The brass tubing is seamless drawn; hard rubber of the finest quality is used; and these features are combined with accurate screw machine work and experienced assembling.

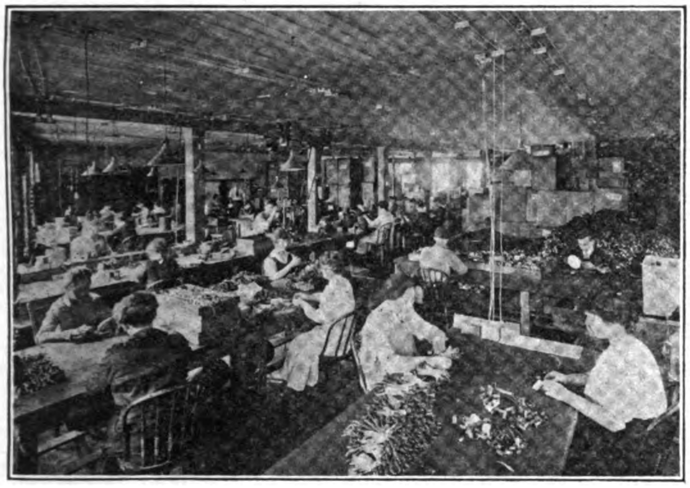
The product of this concern, although it has been in existence but eight years, is standard equipment on more than 75 per cent. of the cars manufactured in the United States. Besides contributing on so large a scale to the domestic motor car industry, with a big market in every state of the union among accessory dealers, the company was also developing its export trade rapidly on a big scale until the conditions that arose incident to the European war made further export business to many countries to a large extent prohibitive.

### Products for Lighting the Car.

The Culver-Stearns' products include practically everything for lighting the car. The famous Giant Searchlight and the Midget Searchlight are two of the most popular on the market.

Culver-Stearns fittings include plugs, connectors, lamp sockets of all descriptions, many of which are standard equipment on various makes of cars and are interchangeable.

The business was organized by Fred A. Culver and Jason C. Stearns, who formed a copartnership in 1909 and started operations in a small way with a shop located in one room where three men were employed It was started on a basis of selling quality lamps direct to consumers, but so rapidly did the changes come in the lighting equipment field that their adoption as standards in the industry produced immense bulk orders from manufacturers and necessitated rapid and extensive expansion. In 1911 the company was incorporated under its present name, Mr. Culver becoming president and Mr. Stearns treasurer and general manager. In the start they had grasped the changes taking place in the matter of automobile equipment and immediately began specializing in electrical fittings for lighting systems on motor cars. Oil and acetylene lamps were all that were used at the time. The new form of lighting at once showed its superiority over the old and advanced rapidly in the favor of the public. Thus, specializing in the manufacture of small electric lamps for cowl, tonneau and inspection lamps, spot lights, reflectors, sockets, connectors and plugs for automobiles, the business grew rapidly with the substitution by the motoring world of electrically lighted equipment for oil and acetylene lamps.



A Scene in a Corner of Assembling Room No. 2, with Operatives Packing and Counting Plugs.

### Company Makes Steady Growth.

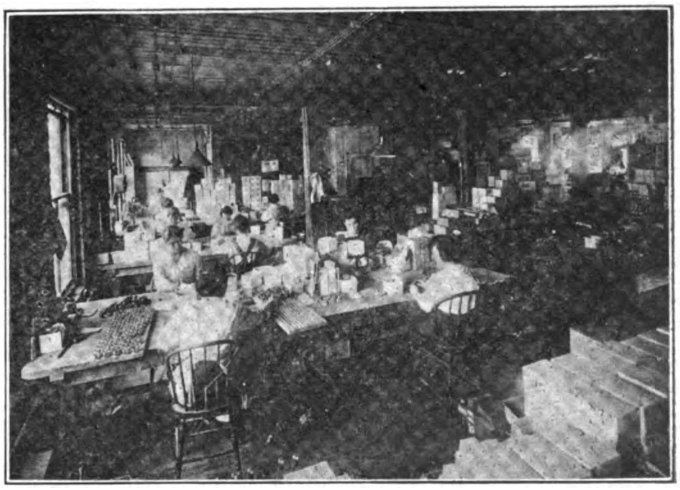
The company came quickly into prominence as one of the first to manufacture and install the electric lighting system on a motor car. Their first product was a "tipover" attachment clamped to the kerosene burner, which converted it into an electric lamp. In this device the current for the bulb was taken from a storage battery. From that period to the present time the adoption of electric lights for motor car lighting has become general and the enormous business that developed for this form of equipment resulted in a rapid expansion of the Culver-Stearns organization, which, all the time continued to improve and specialize in its products. It acquired many patents, having at present upwards of 50 in the United States and abroad to cover various devices.

Interesting Hand and Machine Operations in the Spacious, Well Lighted Assembling Room No. 1.

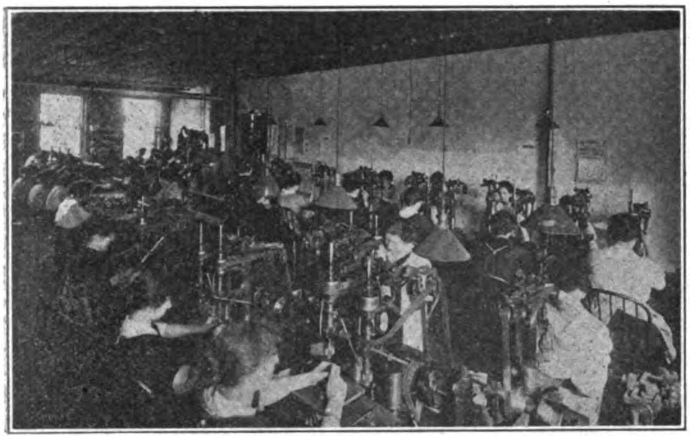
The one room shop has since grown into a plant of 25,000 feet of floor space, with four working floors and a warehouse, and with over 200 operatives in steady employment. By 1912 the business had grown to such a volume that a Detroit office was established so that the company could keep in closer touch with its largest market in the great centre of automobile production located in that city. Mr. Culver makes his headquarters there, devoting his entire attention to the selling end, while Mr. Stearns remains in charge of the big factory in Worcester, caring for the financial and production detail.

### Factory Departments Hives of Industry.

The plant of the Culver-Stearns company any working day is a splendid view of busy industry and systematic production. At long rows of tables in the assembling rooms girls fit the small parts together as



Inspection Room of the Culver-Stearns Mfg. Co., Where the Finished Product Is Sorted and Packed.

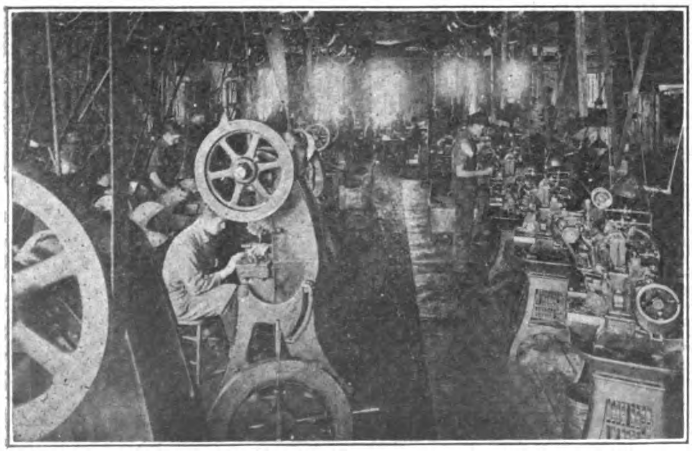


A View of the Drill Press Room, Showing Girls Drilling Contact Points by Machinery.

they come from the machinery departments. To a novice the bits of brass tubing, screws, etc., seem countless. Indeed they would be almost so when it is considered that the force is working on a 50,000 order here, a 200,000 order there and a 600,000 order over yonder. The soldering of sockets at a revolving table by operatives and bunsen burners, the placing of contact points in plugs by a machine operation are but a few among numerous interesting processes observable in the preparation of the product.

The machine shops illustrated on this page give interesting glimpses of these well arranged, well equipped departments. These departments of the plant comprise a large machine room, drill press room and tool room, arranged and administered for efficiency and the turning out of a quality product.

Sheer progressiveness and the sincere optimism manifested by the company in constantly expanding their manufacturing facilities stood them in good stead in 1916 when the metal scarcity found many makers of parts and equipment short of needed supplies. However, the Culver-Stearns Manufacturing Company was stocked heavily with the necessary metals for its product and were enabled to increase manufacturing operations last year and make better deliveries than at any time in their history. With a very complete stock at hand they likewise maintain that for 1917 they are in an equally favorable position to supply the trade high grade, superior goods from the famous line of Culver-Stearns electric auto lighting specialties.



View Down the Long Aisle in the Machine Room of the Culver-Stearns Mfg. Co., Worcester, Mass.

## TAYLOR DRIVING NEWMAN-STUTZ WINS AT UNIONTOWN.

William Taylor of Los Angeles, driving a Newman-Stutz, won the speedway contest at Uniontown, Penn., May 10. The race, which was the first important one on the calendar for the season, was slow and devoid of any interesting features, the winner's time being 1:15:38 for 100 laps of the track, which is a mile and an eighth in length, making a total distance covered of 112½ miles.

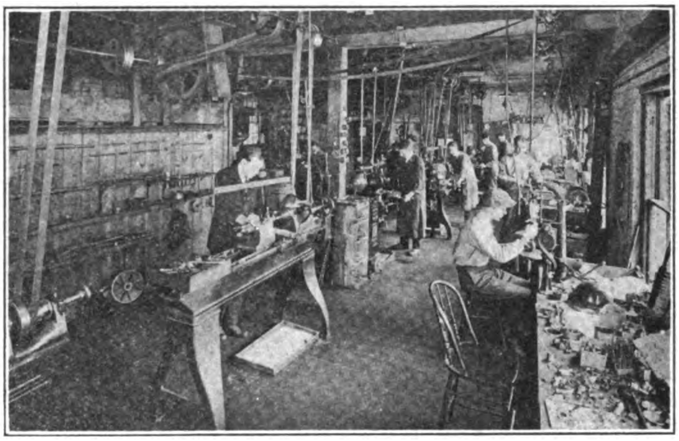
Eddie Hearne, driving a Duesenberg, was second, in 1:16:11. The others finished in the following order: Louis Chevrolet, Frontenac; Boyer, Frontenac; Klein, Johnson; Lewis, Hoskins; Mulford, Hudson; Oldfield. Delage.

Ira Vail, driving another Hudson, lead during the first 26 laps and promised a fast pace, making 90 miles an hour at the time he was forced out when his car skidded on a turn.

## DOBLE-DETROIT STEAM MOTOR COMPANY ORGANIZED.

The Doble-Detroit Steam Motor Company has been organized at Detroit with a capital of $1,000,000 to manufacture and market the well known steam car named for Abner Doble, the inventor. This car, which made a big hit at the national shows, will be handled by over 1100 dealers who have already contracted for over $12,000,000 worth of the cars.

The General Engineering Corporation remains as a separate unit and will take care of the engineering work in connection with building the Doble.



View Showing a Section of the Tool Room at the Plant of the Culver-Stearns Mfg. Co.

## CHICAGO'S USED CAR SHOW IS A BIG SUCCESS.

The used car show which opened in Chicago, May 5, and which closed on the 13th, proved a success from the start, a total of 50 cars being sold the first two days, with a total value of $46,895, an average of $985 per car.

About 120 cars are placed on view at one time and the cars that are sold are removed three times daily, being replaced with other cars. The cars were all thoroughly overhauled before being exhibited

# Securities and General Materials Markets

|  | April 12 Bid | April 12 Asked | May 10 Bid | May 10 Asked |
|---|---|---|---|---|
| Ajax Rubber Co | 69 | 71 | 68 | 70 |
| J. I. Case T. M. Co., pfd | 84 | 86 | 84 | 88 |
| Chalmers Motor Co., com | 20 | 28 | .. | 20 |
| Chalmers Motor Co., pfd | .. | .. | .. | .. |
| Chandler Motor Car Co | 97 | 100 | 94 | 100 |
| Chevrolet Motor Co | 114 | 118 | 103 | 104½ |
| Fisher Body Corp., com | .. | 38½ | 32 | 38 |
| Fisher Body Corp., pfd | 94 | 96 | 94 | 96 |
| Fisk Rubber Co., com | 68 | 75 | 70 | 75 |
| Fisk Rubber Co., 1st pfd | 103 | 106 | 103 | 106 |
| Fisk Rubber Co., 2nd pfd | 70 | 100 | 92 | 95 |
| Firestone Tire and Rubber Co., com | 139 | 141 | 128 | 131 |
| Firestone Tire and Rubber Co., pfd | 106 | 108 | 101 | 108 |
| General Motors Co., com | 113 | 114 | 106½ | 107½ |
| General Motors Co., pfd | 87 | 87¾ | 89 | 90¾ |
| B. F. Goodrich Co., com | 52¼ | 53 | 48½ | 50 |
| B. F. Goodrich Co., pfd | 109½ | 112 | 106 | 109 |
| Goodyear Tire and Rubber Co., com | 239 | 242½ | 195 | 200 |
| Goodyear Tire and Rubber Co., pfd | 106 | 107 | 106½ | 108¼ |
| Grant Motor Car Corp | 6 | 8 | 5 | 8 |
| Hupp Motor Car Corp., com | 4 | 5 | 3 | 4 |
| Hupp Motor Car Corp., pfd | 78 | 84 | 74 | 80 |
| International Motor Co., com | .. | 16 | .. | 16 |
| International Motor Co., 1st pfd | .. | 70 | .. | 70 |
| International Motor Co., 2nd pfd | .. | 80 | .. | 80 |
| Kelly-Springfield Tire Co., com | 55 | 56¾ | 49 | 51 |
| Kelly-Springfield Tire Co., 1st pfd | 87 | 92 | 87 | 94 |
| Lee Rubber and Tire Corp | 21 | 22 | 18 | 18¼ |
| Maxwell Motor Co., Inc., com | 52 | 53 | 51 | 52 |
| Maxwell Motor Co., Inc., 1st pfd | 67½ | 69 | 66 | 67 |
| Maxwell Motor Co., Inc., 2nd pfd | 34 | 34½ | 30½ | 32 |
| Miller Rubber Co., com | 225 | 234 | 195 | 204 |
| Miller Rubber Co., pfd | 104¾ | 106½ | 104 | 106 |
| Packard Motor Car Co., com | .. | 161 | .. | 152 |
| Packard Motor Car Co., pfd | .. | 101 | .. | 101½ |
| Paige-Detroit Motor Car Co | 37¼ | 38¼ | 32 | 33½ |
| Peerless Truck and Motor Corp | 14 | 17 | 11 | 11¼ |
| Portage Rubber Co., com | 149 | 156 | 145 | 150 |
| Portage Rubber Co., pfd | .. | .. | .. | .. |
| Regal Motor Car Co., pfd | .. | 23 | .. | 24 |
| Reo Motor Car Co | 35 | 35¾ | 28¾ | 29½ |
| Saxon Motor Car Corp | 52 | 54 | 46½ | 47½ |
| Springfield Body Corp., com | 68 | 75 | 52 | 62 |
| Springfield Body Corp., pfd | 105 | 115 | 100 | 110 |
| Standard Motor Construction Co | 13¼ | 13¾ | 11½ | 12½ |
| Stewart-Warner Speed Corp | 76½ | 77½ | 74¼ | 75¼ |
| Studebaker Corp., com | 94¾ | 95¾ | 89 | 89½ |
| Studebaker Corp., pfd | 102 | 106 | 101 | 107 |
| Swinehart Tire and Rubber Co | 74 | 81 | 68 | 72 |
| United Motors Corp | 35¼ | 35¾ | 30⅛ | 30⅜ |
| U. S. Rubber Co., com | 56 | 56½ | 55½ | 56 |
| U. S. Rubber Co., pfd | 108½ | 109 | 106½ | 107 |
| White Motor Co | 47½ | 48 | 44¼ | 45 |
| Willys-Overland Co., com | 32¼ | 32½ | 30 | 30½ |
| Willys-Overland Co., pfd | 96½ | 98½ | 95 | 97 |

## DOMESTIC CRUDE OIL PRICES.

The prices of crude petroleum at the wells during the middle of the month of May were:

|  |  |  |  |
|---|---|---|---|
| Pennsylvania dark | $3.10 | Corsicana light | $1.70 |
| Mercer black | 2.45 | Corsicana heavy | .85 |
| Cabell | 2.87 | Electra | 1.70 |
| New Castle | 2.10 | Henrietta | 1.70 |
| Corning | 2.40 | Caddo, La., 38° | 1.90 |
| Wooster | 2.18 | Caddo, La., heavy | 1.00 |
| North Lima | 1.88 | Healdton | .90 |
| South Lima | 1.88 | Moran | 1.70 |
| Indiana | 1.78 | Strawn | 1.70 |
| Princeton | 1.92 | Thrall | 1.70 |
| Somerset 32° | 2.20 | De Soto | 1.80 |
| Ragland | 1.00 | Crichton | 1.40 |
| Illinois above 30° | 1.92 | Canada | 2.28 |
| Kan. & Okla | 1.70 | Humble | 1.00 |

**Naphtha.**

|  | 10-gal. drums Under 100 cases | 10-gal. drums 100 cases and over |
|---|---|---|
| Benzine, 59-60° | 35¼ | 34¾ |
| Stove | 35½ | 35 |
| Auto, 68-72° | 39 | 38⅜ |
| Naphtha, 73-76° | 43 | 42½ |

|  | In cans and cases Under 100 | In cans and cases 100-199 | In cans and cases 200-299 |
|---|---|---|---|
| Benzine, 59-72° | 30½ | 30¼ | 30 |
| 75 a 76° | 38¼ | 38 | 37¾ |
| Stove | 30¾ | 30½ | 30¼ |
| Auto, 68-72° | 34¼ | 34 | 33¾ |

## NEW YORK CITY PRICES.

New York City prices for petroleum and its products were:

**Petroleum.**

|  |  |  |  |
|---|---|---|---|
| Crude, barrels, a gallon | 15a18 | Fuel, 31° | 10½ |
| Refined, barrels | 12 | Fuel, 34° | 11 |
| Tank wagons delivery | 9 |  |  |

**Naphtha.**

|  |  |  |  |
|---|---|---|---|
| Garages | 24 | V. M. & P. deod., in steel | 22 |
| Consumers | 26 | V. M. & P. deod., in wood | 24 |

**Gasoline.**

|  |  |  |  |
|---|---|---|---|
| Gas machine, steel | 41 | 68-70° steel | 29 |
| 72-76° | 38 | 68-70° wood | 32 |
| 72-76° wood | 26 |  |  |

## GENERAL MARKET PRICES.

|  | April 12 | May 15 |
|---|---|---|
| Antimony | .35 | .25 |
| Iron, foundry, S., ton | .. | 38.00 |
| Iron, foundry, N., ton | .. | 42.00 |
| Iron, Bessemer, ton | .. | 42.00 |
| Steel, Bessemer, ton | .75 | .80 |
| Beams and chan., 100 lbs | .. | .. |
| Copper, elec., 100 lbs | .34 | .32 |
| Copper, lake, 100 lbs | .34 | .32 |
| Lead, 100 lbs | 9.50 | 9.50 |
| Tin, 100 lbs | 54.50 | 54.50 |
| Petroleum, Penn., cr., bbl | 3.05 | 3.19 |
| Petroleum, Kan., cr., bbl | 1.70 | 1.70 |
| Linseed oil, raw | 1.06 | 1.27 |
| Rapeseed oil, refined | 1.10 | .. |
| Lard oil, prime | 1.60 | 1.85 |
| Fish oil, Menhaden, br | .74 | .80 |
| Sulphuric acid, 60 | 1.50 | 1.50 |
| Cottonseed oil, bbl | 14.68 | 16.40 |
| Silk, raw, Italy | .. | 7.45 |
| Silk, raw, Japan | .. | 5.97½ |
| Rubber, fine, up-river, Para | .76 | .76 |
| Tire, scrap | .06½ | .06½ |
| Steel, open hearth, ton | 75.00 | 80.00 |

## FOREIGN TRADE OPPORTUNITIES.

(Address Bureau of Foreign and Domestic Commerce, Washington, D. C., Giving Number, Which Will Forward Correspondence, Unless Otherwise Stated.)

24,362.—The representative of a firm in the United States, who is to leave for Russia about the first of June, desires to secure an agency, on a commission basis, for the sale of general merchandise, agricultural machinery, machinery, automobiles and accessories, tractors, trucks, hardware, cutlery and leather. He also intends to purchase some of the goods.

24,370.—A firm in Russia is in the market for 10 or 15 motor cars capable of seating two men and with a box attached behind for carrying material and specially constructed for rough roads. It also desires to get two motor platforms with a capacity of not less than five tons each. Full information in regard to prices, etc., should be submitted. Quotations should be made f. o. b. American port, including packing.

24,396.—An agency is desired by a company in India for the sale of all kinds of acids, automobiles and accessories, buttons, leather and canvas belting, bicycles and accessories, boots and shoes brass and iron carriage furniture, such as bells, lamps, springs, axles, steel wire and wood wheels, etc., canned goods, chairs, new and second hand moving picture films, vacuum cleaners, clocks and chimes, cloth wire and concrete machinery. Quotations should be made c. i. f. or f. o. b. Bombay and Karachi. Payment will be made by 60-day sight draft through firm in New York. Correspondence may be in English. References.

24,408.—An agency is desired by a firm in India for the sale of cotton goods, cottonseed oil, cutlery, drugs, dry goods, electric supplies, fancy goods, glass and glassware, gig cloth, hardware, floor cloth, knitting machines, linoleum, leather cloth, leather for carriage tops and lining, lubricating oils, general machinery, matches, mirrors, motor trucks, rails, screws, oils of all kinds, paper, pencils, perfumery, picture frames, reflector advertising machines, provisions, ropes, rubber goods, rubber tires for carriages and motor cars, scissors, tent material, toys, typewriters, underwear, watches, woolen goods, wire and wire netting and mercerized yarn, etc. Quotations should be made c. i. f. or f. o. b. Bombay and Karachi. Payment will be made by 60-day sight draft through a New York firm.

# *HAPPENINGS AMONG THE CAR AND PARTS MAKERS*

## What Several of the Leading Manufacturers in the Motor Vehicle Industry and Allied Lines Are Doing or Have Under Consideration

**The P. J. Durham Co.** have been appointed official service representatives of Brooklyn, N. Y., and Newark, N. J., for Bijur electric starting and lighting systems. The company also represent other manufacturers of electric starters and conduct one of the largest service stations in the country devoted exclusively to service work for starting and lighting systems.

**The Wallace C. Hood Service Bureau,** Dime Bank building, Detroit, Mich., has removed to 1199 Woodward avenue, the general office.

**The Waukesha Motor Co.,** Waukesha, Wis., is planning to erect a new administration building to include the experimental shop. The building is to be 44 by 88 feet, two stories and basement.

**The Tower Motor Truck Co.,** Greenville, Mich., has started operations in its new plant and expects to turn out 100 machines this year. The first has been completed and delivered to the Greenville fire department. It is equipped with two 40-gallon chemical tanks, automatic hose reel and 200 feet of hose.

**The Goodyear Tire and Rubber Co.,** Akron, O., has set aside 700 acres of land to be cultivated for beans, onions, wheat, corn and peas.

**The BeSaw Tire and Rubber Co.,** Canton, O., is planning to increase its tire output from 150 to 500 tires a day. The capital is to be increased from $220,000 to $1,000,000. About 200 additional men will be employed.

**The Fostoria Pressed Steel Co.,** Fostoria, O., has been incorporated for $100,000. The company will supply all the steel work for the building of the Allen car and for steel needed in the Dale Body Co., which manufactures the bodies for the Allen.

**The Bittel-Leftwich Tire and Service Co.** has changed its name to the Bittel-Leftwich Co. and will open a wholesale and retail accessory department. The company has confined operations to Lee tires, wholesale and retail. A building containing 12,000 square feet and two stories high is being erected. The manager is C. H. Shuptrine. He was formerly in charge of the accessory department of the Grand-Leader department store. The company has branch stores at Springfield and Decatur, Ill.

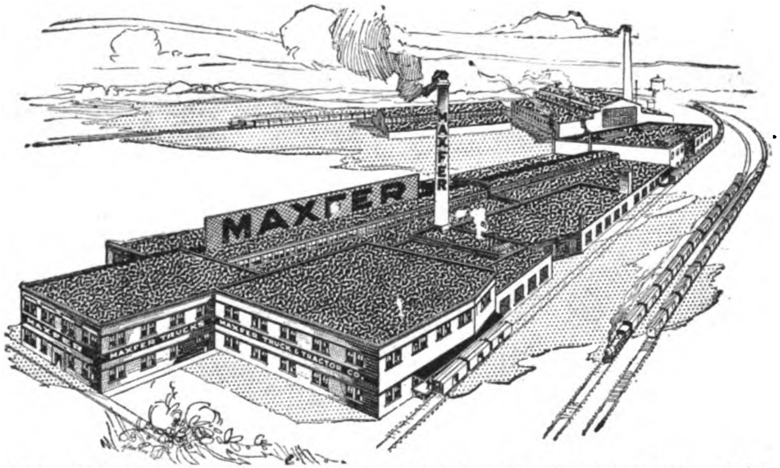
**The Owen, Graham & Starkweather Co.** will market the Doble steam cars in Detroit territory. Mr. Starkweather will have the active management and sales direction and will continue his present position as branch manager of the Buick Motor Company.

**The Republic Motor Truck Co.,** Alma, Mich., is erecting three new buildings, which will aid materially to increase its output. Two of the new buildings will be of brick and the third will be a frame structure.

**The Grant Motor Corp.,** Cleveland, O., has purchased additional land adjoining its present new plant at Cleveland, O., and will erect several buildings at a cost of $500,000. One building will be 657 by 160 feet and another 400 by 160 feet. In addition there will be a new office building 40 by 160 feet.

**The Maxfer and Tractor Co.** has purchased a new plant at Harvey, Ill., which has 10 times the manufacturing space of the old plant at Chicago. The additional manufacturing facilities and increased equipment in the new factory has made possible a daily production of 300 Maxfers. The company has representatives in all the principal cities in the United States, Canada and foreign countries.

**The United Alloy Steel Corp.,** Canton, O., which produces a large percentage of the alloy steels used in the automobile industry, has recently opened 10 new furnaces, making a total of 17 now operated.



New Plant of the Maxfer Truck and Tractor Co. at Harvey, Ill., Which Has 10 Times the Manufacturing Space of the Company's Old Plant at Chicago.

**The S K F Ball Bearing Co.** of California, Inc., has established a branch at 341 Larkin street, San Francisco, for the distribution and handling the sale of S K F ball bearings on the Pacific coast. A. M. MacLaren will be in charge of the office.

**The Pierce-Arrow Motor Car Co.,** Buffalo, N. Y., at its annual meeting held recently elected the following board of officers: President, Charles J. Clifton; vice president, Henry May; second vice president, W. J. Foss; secretary, L. H. Gardiner; treasurer, W. C. Wrye..

**The Westcott Motor Car Co.,** Springfield, O., has advanced the price of the Westcott four-passenger roadster and the five-passenger touring car from $1590 to $1790. These models will be fitted with 35x4½ tires instead of 34x4 tires.

**The Smith Form-a-Truck Corp.,** maker of Smith Form-a-Truck, is established now in its new quarters at Toronto, Ont. M. H. Stratton is general sales manager for Canada and H. W. Patterson has charge of the Toronto and district offices.

**The Briggs & Stratton Co.,** Milwaukee, Wis., is now occupying its new $100,000 plant at Hopkins and Lewis streets. The plant was formerly located at 258 Milwaukee street. The new plant is four and six stories high, 100 by 100. The company manufactures coils, switches and other gas engine and automobile specialties.

**The Motor-Meter Co.,** Long Island, N. Y., reports a quarterly business exceeding that of the entire shipments of 1916. New equipment is being installed in the factory and a daily production of 5000 moto-meters will shortly be reached.

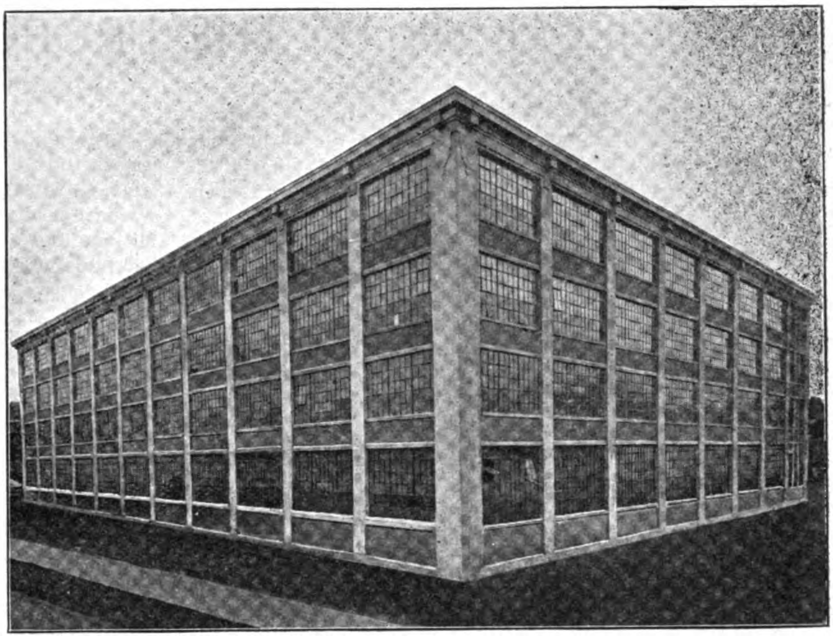
**The Vim Motor Truck Co.,** Philadelphia, Penn., has increased its wages 10 per cent. A reduction of 2½ hours per week in the factory's actual working time was also made. This does not affect the wages.

**The Saxon Motor Car Corp.,** Detroit, Mich., shipped during the month of April 3199 cars. For the first four months of the year shipments amounted to 10,320 cars compared with 9796 cars in the same period of 1916 and 4329 cars in 1915.

**S. F. Bowser & Co., Inc.,** Fort Wayne, Ind., has increased the wages of its employees of 25 to 30 per cent. This will profit about 900 employees by the advance.

**The H. W. Johns-Manville Co.,** New York, N. Y., will concentrate its automobile accessory manufacturing in New Rochelle, where it is at present manufacturing its speedometer in the old Jones Speedometer Co.'s plant. The automobile accessory plant will be moved from Brooklyn. The company is erecting a large four-story addition, giving it 75,000 square feet.

**The Falls Motors Corp.,** Sheboygan Falls, Wis., has put into effect the day light saving plan by setting all clocks an hour ahead and will keep the sched-



The New Departure Mfg. Co., Bristol, Conn., New Steel Ball Plant, the Only Structure in the World Housing Equipment Where Steel Balls Are to Be Produced from Raw Material Complete to Finished Product.

ule in force during the summer months.

**The Fisher Body,** Detroit, Mich., will erect a five-story building in addition to its present plant.

**Edward V. Hartford, Inc.,** in addition to an extensive national advertising campaign, covering the great circulation of the metropolitan dailies, the leading weekly and monthly magazines and trade journals, reaching 30,000,000 readers, will also use a 25 set locality proposition. This is a strong appeal to dealers to handle the Hartford equipment as the demand has been created for the article in every city, town or village.

**The Dixie Motor Car Co.,** Louisville, Ky., has issued a new price schedule, which becomes effective on June 1. After that date the prices of the Dixie Flyer model L, series three, will be as follows: Five-passenger touring car, $895; four-passenger roadster, $895; five-passenger convertible sedan, $1295. All prices are f. o. b. factory.

**The Metz Motor Car Co.,** Waltham, Mass., has received an order from the Auto Trading Co., Pittsburg, Penn., for a car load of Metz cars to be shipped every day. The Metz cars have become very popular in the mountainous sections of Pennsylvania, owing to their ability to negotiate hills and rough roads with great ease.

**The Jenkins Vulcan Spring Co.,** St. Louis, Mo., has increased its capital stock from $60,000 to $200,000. At headquarters and the four branches, Minneapolis, Reading, Penn., Fort Worth, Tex., and Sumter, S. C., the company carries in stock a total of 90,000 replacement springs, covering 588 separate and distinct types for all popular priced cars.

**The King Motor Car Co.,** Detroit, Mich., has announced a new price schedule, which went into effect on May 14. The prices are: Roadster, $1585; touring car, $1650; foursome, $1700; sedan, $2300. These prices are f. o. b. Detroit and only cover standard cars. Wire wheels are $100 net additional.

**The J. C. Wilson Co.,** Detroit, Mich., will increase its capital stock to $1,000,000. At the annual meeting of stockholders on May 7 the increase of capital was authorized to provide the additional manufacturing facilities needed to meet the greatly increased demand for Wilson trucks.

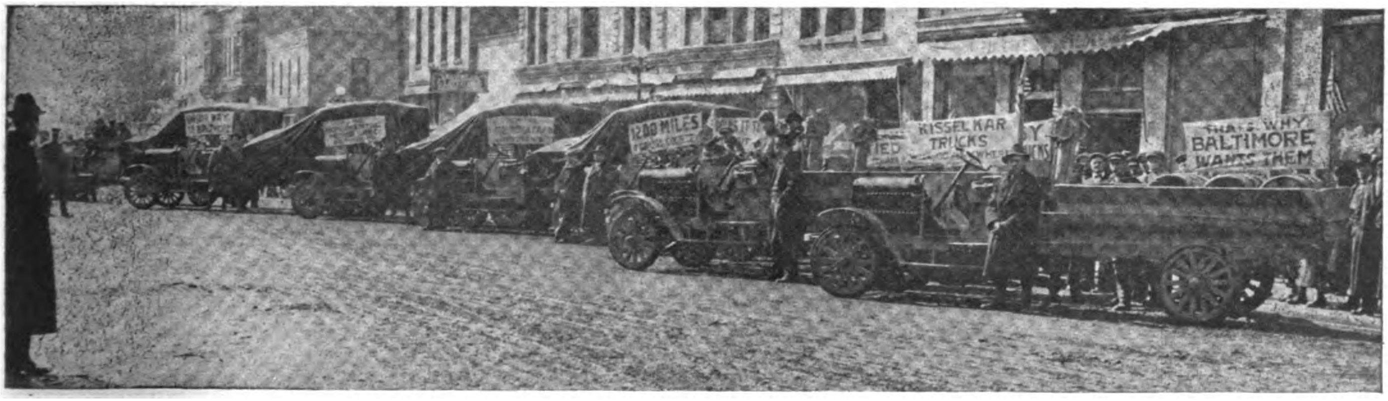
**The Fold-O-Lock Steering Wheel Co.,** capitalized for $250,000, will erect a $50,000 factory at Wichita, Kan., to manufacture the device that locks the car when the steering wheel is folded down against the steering post. The company will also manufacture an automatic radiator top and automatic tire pump. The officers of the company are: C. A. Hagberg, president and general manager; Carl L. Windberg, vice president and sales manager, and F. L. Fraser, secretary and treasurer.

**The Monroe Motor Co.** has announced that the price of the Monroe car has been increased to $1095.

**The New Departure Mfg. Co.,** Bristol, Conn., will soon open its new ball plant, which is the largest of its kind in the world, and as a building is unique, housing as it does a complete equipment for manufacturing steel balls in every operation from the raw stock to the finished product. The building is four stories high, of reinforced concrete construction and has a total floor space of 178,000 square feet, or nearly two acres.

**The Cole Motor Car Co.,** Indianapolis, Ind., has adopted a new type of specially constructed wheel which is used on the Cole Eight. The new wheel has a rolled steel felloe in place of the former type of bent wood felloe. The spokes in the wheels are dovetailed at the hub end and are assembled alternately from opposite sides of the wheel. All spokes are forced into the felloe and together at the dovetail at a pressure of 40 tons. The slipping on of the old fashioned felloe band, which at times loosened, has been eliminated in the new wheel. The locking ring on the rim has also been eliminated, since the tire rim fits directly into the felloe band itself and is held in place by wedges. The wedge bolts and the wedges themselves are assembled through the felloe band and have the benefit of the square hole in the steel to keep the bolt from turning.

**The Maxwell Motor Company** has declared the regular quarterly dividend of 2½ per cent. on the common stock, payable July 2 to stock of record June 11. It is reported that the April earnings of the company were the largest on record and that the net for the fiscal year ending July 31 will exceed $5,000,000. At present 350 cars are being turned out daily and the total for April was 7900. Production for the year is estimated at 80,000 cars, as compared with 60,000 cars last year.



Several Pleasure Cars Delivered in April by the Kissel Motor Car Co. of Hartford, Wis., Mounted on a Truck Caravan, Which Made an Overland Drive of 1300 Miles to Baltimore, Md.

# OBJECTIONS TO THE PROPOSED REVENUE TAX

THE text of the brief prepared by the National Automobile Chamber of Commerce in behalf of the automobile industry, relative to the proposed special tax of five per cent. on the sales of passenger cars and trucks, follows:

To the Members of Congress:

Automobile manufacturers, without exception, desire to pay their full fair share of the government's expense and they ask to be taxed fully and in proportion to all other industries.

They DO, however, consider it unfair to subject them to double taxation or to any form of taxation that may make for monopoly by the elimination of scores of companies that cannot afford to carry the proposed burden.

### 12 Makers Produce 80% and 438 Makers 20% of Cars.

There are 450 listed automobile manufacturers in the United States (Automobile Trade Directory, April, 1917), of **which 12 makers produce 80% and 438 makers 20% of the whole.** The 12 have been prosperous, while the bulk of the others are able to exist only in good times. Prosperity in the motor car trade is due to increasing volume, and the reverse occurs when the volume shrinks.

**It is the prosperity of a few of the very big companies which makes it appear that every one is prosperous in the motor car trade** and that it can stand the special tax.

In truth, the making and marketing of motor cars is an industry of many hazards. Purchases of supplies have to be made more than a year ahead and in the assembling of a car the failure to be supplied with one or two parts has been known to hold up production for weeks.

Last year the trade was the best that the industry ever enjoyed, but with the declaration of war the volume of sales has been seriously affected. **The automobile business is one of big units and profits come only with volume.**

This industry has been obliged to increase its cost for labor 25% and material a great deal more, as indicated in the appended list of recent increases:

| | |
|---|---|
| Sheet aluminum | 40% |
| Steel castings | 30% |
| Bearings | 35% |
| Aluminum castings | 50% |
| Leather | 30% |
| Stampings | 75% |
| Sheet steel | 65% |
| Tungsten steel | 400% |
| Steel tubing | 40% |
| Iron castings | 35% |
| Forgings | 75% |

By the increased volume of sales these material and labor costs have been overcome to some degree, although last year almost all makers were obliged to increase their list prices in a good market. **To attempt any increase now, however, with a falling market,** would be certain to seriously curtail sales and production.

### 915,000 Wage Earners.

Although not generally known, because of the giant strides of 10 or 15 of the bigger companies, the automobile industry **comprises approximately 450 manufacturers of motor cars located in 32 states, 825 makers of parts and accessories** located in almost every state in the Union besides 25,924 dealers and 23,686 garages throughout the country all depending on the products of the motor car manufacturers. Fourteen companies employ 145,000 men. Figuring an average of only 300 men for each of the others gives 135,000, or a total of 280,000 wage earners.

Body, parts, material, accessory and supply plants employ 350,000. The 25,724 automobile dealers with an average **of only six employees indicates** 150,000.

The 23,686 **garages with three people each is** 75,000, while **there are approximately 50,000 employees in the** 12,171 machine shops and not less than 10,000 employees in the 2500 supply houses. These figures show 66,443 concerns or plants directly or indirectly associated with the industry, employing 915,000 wage earners with total dependents of almost 3,000,000. These figures are considered very conservative.

### Export Trade Lost This Year.

Another very serious fact that faces the automobile industry is the falling off of exports, these exports amounting last year to 61,941 passenger cars and 18,903 trucks, with a total valuation of $96,000,000. Because of embargoes, shipping conditions and other reasons exports have already largely fallen off and for 1917 will no doubt be less than half the previous year.

### Profits of Makers Small on Volume.

Few of the 450 manufacturers are, we believe, averaging to exceed 12% on their turnover. The 5% tax would, therefore, take 5/12 of their profits (assuming the tax cannot be passed on to the consumer) which would equal 5/12 of the profits of the trade as a whole. It would be equivalent to a tax of 41.5% on the profits of companies that make profits and would, of course, entail a serious loss for a great many others.

**Profits have been small per unit because the trade depends** on volume. An average of 12% is much lower than in most other industries.

**It can be readily seen from this low margin of profits on the volume of sales how confiscatory would be the proposed 5% tax.**

### Industry Now Suffering in Sales.

The motor car industry is suffering from the war, makers showing any number of cancellations and a general slowing of demand. If added to this general slowing down there is a 5% tax, the future of the industry is certainly menaced.

### Difficulties of a Falling Market.

**The 5% tax cannot generally be passed with any success to the consumer because of the impossibility of advancing prices on a falling market.** If attempted, and some may attempt it, it will decrease demand and, of course, the volume of business on which profits depend.

Very few manufacturers if obliged to pay this tax would have anything to pay under the excess profits tax and their profits remaining, if any, would be less than 8% on their investments. In many cases it would entail a substantial loss.

Such condition would curtail sales and production and decrease any excess profit which the government might ordinarily receive.

### 718 Manufacturers, Five Years' Failure Record.

There can probably be no greater indication of the difficulties than to note the failures that have strewn the path of the past five years. **The business has been extremely hazardous and the difficulties of many have been overshadowed by the glittering successes of a few great concerns** whose organizations and facilities were such that they would **have made probably as great a success in any other line.** The mortality has been greater than in any other industry of which we have record.

The official records of the "Automobile Trade Directory" gives the names and addresses of 718 companies that failed or went out of business since 1912, and of this number, 133 car manufacturers failed during the past two years. * * *

**We believe that not more than one-half of our automobile manufacturers are breaking even and certainly very few are making in excess of 10% on their turnover.** * * *

**The automobile industry is anxious to supply its share of revenue to the government and feels that with a fair chance to do business and to keep its industry stable,** it can supply a substantial amount. If the volume of trade falls off, however, this result will be disappointing.

### Four Out of Five Sales with a Trade.

During the past year, excluding Ford, 80% or four-fifths of all new cars were sold to people who already owned cars and traded them in. If any effort is made to impose a 5% tax on them they will largely keep their old cars instead of replacing them with new, and thus prevent the industry producing any great revenue for the government.

While some makers may try to add such a tax to the consumer price, the makers generally agree that on the falling market such an attempt would curtail buying to the detriment of the trade as a whole. With materials bought and

# OF 5 PER CENT ON THE AUTOMOBILE INDUSTRY

schedule of cars under way, a congestion of the market might result.

### Possibility of Increasing Monopoly for Big Companies.

**If one or two of the big makers decided to absorb this tax themselves the result would be an increasing monopoly for** them and certain failure for many of the smaller ones.

### Motor Cars in General Use.

It is estimated that more than 40% of the cars registered in this country are owned by farmers, who have been the biggest buyers of cars for the past two years.

State records showed 3,541,738 cars and trucks registered in the United States on Jan. 1, 1917. **There is one motor car for every 13 people in Iowa and Nebraska,** one for every 19 people in Arizona and Montana, and one for every 22 people in Texas. New York state and Pennsylvania have only one for every 37 people.

### Advertising the Automobile.

The advertising expense of motor car makers based on the volume of business, is about the same as in other lines of manufactured and trade marked articles.

### Cars Are Made Everywhere.

So many cars are produced in Michigan and Indiana that statements made indicate the belief that only those states are interested in motor car manufacture.

While the great majority of the cars are put together or assembled in Michigan, Wisconsin, Ohio, Indiana, New York and Illinois, **the parts for these cars are made in a score of states throughout the country.**

**There are automobile factories in 32 states** a journal of the trade asserts. There are 825 makers of parts and accessories dealing directly and more than 1100 other companies dealing indirectly with the trade to supply the needs of car makers and these companies are from almost every state in the country.

The Chilton Trade Directory lists 465 articles sold to automobile makers, including leather, cotton, lumber, steel, copper, paint, glass, rubber, brass and parts (complete), ranging from air gauges, ammeters and axles to windshields, wrenches and wheels.

### Position of Manufacturers of Parts and Accessories.

Parts and accessory manufacturers call attention to the fact that any great falling off in the industry, curtailing production and with possible failures, **would leave them with many articles manufactured for a special purpose but unavailable for general use.** Parts like axles, steering gears, frames and bodies are designed especially for certain cars and are of little use for other cars of different design and weights.

### Dealers and Garages Everywhere.

Even after motor cars are sold they must be rehandled by 25,000 or more dealers in every city and hamlet, stored by 23,000 garage owners and repaired when necessary by 12,000 machine shops.

### The Dealer's Position and Risk.

**The dealer's position in connection with this tax warrants careful consideration.** He maintains salesrooms, under lease, with certain fixed expenses all dependent on the sale of certain types of motor car. If a dealer cannot obtain cars from his own company he suffers a loss, because most other lines are represented in his own city and he is left with nothing to sell.

Reports show that not more than half of the motor car dealers are making more than a living. The dealer buys his cars at 15 to 25% from the list price (on 60% of the cars it is 18% or less) and out of that margin he is obliged to pay rent, commissions to salesmen, heat, light and power, furnish a certain amount of free service on all cars sold and because of his using gasoline and having his cars driven by demonstrators he is obliged to pay high rates for fire and liability insurance.

To make sales, dealers are obliged to take in the second hand cars of their customers, which are invariably sold at cost, and in many cases at a loss. In general it may be said that the average dealers have to make two sales to get one profit because, with the exception of Fords, four out of five sales of new cars involve the trading of an old car.

### Unfair to Tax Cars in Hands of Dealers.

Because of the trade practise of buying motor cars in advance, the plan to apply the tax on cars held by other than manufacturers at time the law becomes effective, would entail a severe hardship upon the dealers.

It is customary for dealers to take cars from the manufacturers during the winter for selling during the spring months. **Dealers now have millions of dollars worth of new and second hand cars on hand;** they have accepted contracts from sub-dealers for future delivery and retail buyers at published prices, and payment of the tax would mean substantial losses. If an attempt is made to change the retail buyers' orders it will result in many cancellations. The second hand cars in the hands of the dealers have been taken in at their full worth and in most cases will be sold without profit. To tax these used cars when cars in the hands of users are not taxed is wholly unfair, and will certainly result in large losses to the dealers.

In selling to customers the dealer has to overcome the prejudice which the former has in connection with the general taxing of automobiles, involving as it does in some states a car tax, a driver's license tax, a wheel tax, a personal tax and in some cases as in the District of Columbia, a double registration required by the district and by the adjacent states.

Then, too, in some states, as in North Carolina, $500 must be paid for a license to sell any make of motor car in the state.

### Motor Trucks Not a Luxury.

**It seems very unfair to class motor trucks in the bill as a luxury. Passenger cars have almost entirely ceased to be a luxury, while motor trucks never were.** Truck makers are supplying a vehicle for the transportation of goods that is aiding the railroads and helping to keep down the cost of almost everything that is used by the American family.

The 300,000 commercial cars now in use in the country give an annual service of 4,500,000,000 ton miles. At the average railroad freight rate of 7/10 of a cent per ton mile this is worth $31,500,000, and at the rate of 20 cents per ton mile for haulage by wagon road, is worth $900,000,000 a year.

**Certainly the motor truck has no place under any heading that carries with it the idea of luxury.** On the contrary, the truck is to be considered a great and growing necessity in our industrial, military and commercial life.

**People will not freely buy automobiles in war times or under heavy tax conditions and the greatest kind of economy must be practised, and energetic business methods followed to maintain a fair selling average this year.**

If makers have to begin curtailing output to any substantial extent it will mean increased manufacturing cost. Reduction of output does not correspondingly save overhead which, next to material, is the largest element entering into the manufacture of cars and trucks.

Automobile manufacturers are proud of the advancement of their industry and the service of the motor car has supplied and added to the facilities for the transportation of men and materials.

The automobile makers asked to be recorded in their desire to co-operate with the government needs in every way. **They simply ask to be treated like all other industries** and in the long run believe such treatment will furnish **greater financial and greater industrial support to the government,** and with an even chance of maintaining themselves under the very trying conditions which beset all lines of endeavor in this crisis.

Our effort has been to give in a most concise form a statement of the position of the industry and we are ready to supply further information and details regarding any of the statements made herein.

NATIONAL AUTOMOBILE CHAMBER OF COMMERCE, INC.
ALFRED REEVES, General Manager.
New York, May 14, 1917.

# Activities of Prominent Men of the Industry

## Resignations, Promotions and Other Changes in Personnel of Motor Vehicle Manufacturing and Merchandising Companies and Allied Businesses

**William Mitchell Lewis**, for several years president of the Mitchell Motor Car Co., has entered the moving picture industry through purchase of control of the Educational Films Corp. of America. He has assumed the treasurership of the film company and will be active in its management.

Hugh Chalmers, President of the Chalmers Motor Co., Detroit, Mich.

**P. E. Mills** has been made sales engineer by the Eisemann Magneto Co., Brooklyn, N. Y. He was formerly assistant chief engineer for the company.

**Joe Dawson** has joined the forces of the Chalmers Motor Co., Detroit. He has been appointed assistant experimental engineer, with special duties in the contest and trials section of the Chalmers' advertising department. Mr. Dawson was a noted famous racing driver.

**A. N. Goodfellow** has been appointed western sales manager for the Standard Roller Bearing Co., Philadelphia, Penn. Mr. Goodfellow's territory will include the Middle West and part of the ground to the west of the Mississippi.

**Horace E. Dodge**, one of the Dodge brothers, has given his 80-foot steam yacht "Nokonis I" to the government for use for war purposes. The yacht, which is valued at $250,000, has been accepted by the government.

**Roland Moeller** has been appointed sales manager of the Lemke Electric Co., Milwaukee, Wis. He was formerly president and general manager of the J. W. Levitt Co., Los Angeles, Cal.

**L. S. Huntington** has been appointed manager of the local offices of Pugh Brothers Co. of Providence, R. I. He has been connected with this company for several years.

**R. P. Hockenberger**, formerly connected with MacInnis Brothers, has become associated with the Grasser Motor Co., Toledo, O., as Republic truck salesman.

**C. H. King**, vice president and general manager of the Chalmers Sales Co., Inc., New York branch of the Chalmers Motor Co., it is announced, opened the new branch headquarters last week at 1826-28 Broadway.

**Nicholas Wilson** has been appointed assistant traffic manager to Frank Shaw of the Harroun Motors Corp., Wayne, Mich. Previous to his present connection Mr. Wilson occupied similar positions with the Studebaker Corp. and the Maxwell Motor Co., Inc.

**Ward F. Herst**, well known in manufacturing circles of the industry, is now general manager of the M & S Corp., Detroit, Mich. He was formerly in active connection with the Brown-Lipe Gear Co., Syracuse, N. Y.

**Ralph S. Lane** has resigned as chief engineer of the Hyatt Roller Bearing Co., Detroit, Mich. He will devote his attention to the operation of the Bearings Service Co. and the United Motors Service, Inc., both of which he is president.

**Hugh Chalmers**, president of the Chalmers Motor Co., handed G. D. Pope, chairman of the Detroit chapter of the Red Cross, a total of $1887, contributed by the executives and workmen of the Chalmers company.

**George W. Dunham** has been appointed a member of the Tractor Board of the Ordinance Department, U. S. Army. He is president of the Society of Automotive Engineers. The board, which will be composed mostly of army officers, will have charge of transportation of heavy artillery with tractors and will develop certain types for this kind of service.

**R. L. La Rue** is now special factory representative of the Olympian Motors Co. of Pontiac, Mich. He was formerly with the Northwestern Motor Sales Co., Minneapolis and St. Paul.

**Alfred Thompson** has been elected president of the Abbott Corp., Cleveland, O. He was formerly production manager of the Maxwell Motor Co. and the Hudson Motor Car Co. Mr. Thompson takes Guy Morgan's position, who has resigned.

**W. J. Shroder** has resigned as assistant branch superintendent of the Dallas branch of the Maxwell Motor Sales Corp. and has been appointed assistant sales manager of the Burton-Rountree Co., Dallas, Tex. The Burton-Rountree company distributes Hupmobiles and Maxwells.

**Kelly R. Jacoby** has been advanced to the post of assistant sales manager of the Willys-Overland Co. He has handled with credit the manifold details of the company. He was Toledo zone manager of the company before going into the service end and before joining the organization had served as general manager of the Miami Cycle and Mfg. Co. Mr. Jacoby is succeeded in service by Herbert G. Fitch.

**George W. Cravens** has been appointed chief engineer of the Elkhart Carriage and Motor Car Co. Mr. Cravens has had a wide and varied engineering experience during the past 25 years. In the early days of the bicycle industry he designed the first bicycle of large tube construction. He is one of the founder members of the Aero Club of America and also holds membership in other leading mechanical and electrical engineering societies. For a number of years Mr. Cravens has acted as consulting engineer for various companies and has specialized in the development of automobile parts as well as complete cars.

C. H. King, Vice President and General Manager of the Chalmers Sales Co., Inc., New York City.

**E. H. Stickels** has resigned from the presidency of the Holt-Welles Co., Inc., selling agents of the Branford Carburetor, and has disposed of the stock holdings in the Malleable Iron Fittings Co., Branford, Conn. Mr. Stickels is contemplating entering the automobile accessory field as factory representative.

**Harry L. Loop, Jr.**, former Philadelphia branch manager of the Chase Motor Truck Co., has resigned and is now connected with the Rands Auto Co., Philadelphia distributors of the famous Selden In Bilt Quality truck from ¾ to five-ton capacity. The Rands Auto Co. is situated at 1805-07 Market street.

**J. G. Murphy**, who for the past 11 years has been connected with the Pierce Arrow Co., Buffalo, has been appointed superintendent of the Pathfinder Co. of Philadelphia.

**H. R. Keeling** has been appointed advertising manager of the Haynes Automobile Co., Kokomo, Ind. He comes from the Armstrong Cork Co., Pittsburg, known to the automobile industry through its cork clutch inserts.

**P. W. Gilbert** is now assistant to J. C. Manternach, the general manager of the Standard Parts Co., Cleveland, O.

**Howard B. Smith, Inc.**, has been appointed Western New York and Northern Pennsylvania distributor for Kissel pleasure cars and trucks, with headquarters at Buffalo, N. Y.

**Robert T. Gebler**, formerly advertising manager and assistant sales manager for the Keasbey & Mattison Co., Ambler, Penn., has been appointed advertising manager and assistant sales manager for the Martin Truck and Body Corp., York, Penn.

**Gould Alles** has been appointed sales manager of the Fuller & Sons Mfg. Co.

**Jesse E. LaDow** is now on a tour of the Far East, inspecting rubber plantations and generally surveying the crude rubber situation at the source. He is secretary of the Mansfield Tire and Rubber Co., Akron, O.

Howard A. Matthews, Treasurer Jackson Automobile Co., Jackson, Mich. President Jackson Motor Car Co., Boston, Mass.

**Tom O. Jones** has been appointed a special agent of the United States Department of Commerce, with duties of investigating markets abroad for American automobiles, especially in China, Australia, East Indies and Africa. He was formerly advertising manager of the Empire Automobile Co. at Indianapolis.

**A. J. Gibson** has severed his connection with the Garner Motor Car Co., Chalmers dealer, and has entered the truck business. He has been placed in charge of the truck sales for the Paige Motor Sales Co., Seattle, Wash., dealer in Rainier trucks.

**P. H. Swift** has joined the sales force of the H. L. Yaryan Co., Toledo, O. He will sell Oakland and Westcott cars. He was formerly associated with the Willys-Overland Co., and previously with the Auburn Co. of Auburn, Ind.

Coker F. Clarkson, General Manager of the Society of Automotive Engineers.

**William C. Mullin** has become service manager of the Thornton-Fuller Automobile Co., dealer in Dodge Brothers and Simplex cars at Philadelphia. He has been in the sales end of the local organization for some time and takes over the service following a trip to Detroit to study the organization end of the business.

**W. A. Hall** is now general manager of the agency selling Stearns-Knight and Saxon cars. He will have headquarters at 1426 Bedford avenue, Brooklyn, N. Y. Mr. Hall is experienced in this line and is well known in automobile circles.

**H. D. Allee** has become assistant treasurer and comptroller of the Hayes Mfg. Co., Detroit. He has been for the past 10 years with Parke, Davis & Co.

**J. D. Carey** has been appointed manager of sales for the carriage tire department of the Kelly-Springfield Tire Co. at the company's headquarters at Cleveland. He was formerly district manager for the same company in the southern territory.

**J. N. Kelly** has resigned his position as superintendent of the Ross Gear and Tool Co., Lafayette, Ind., makers of steering gear equipment. E. L. Usner has been made assistant manager, J. P. McParland superintendent of machine shops and M. C. Griswold superintendent of assembly.

Howard E. Coffin, Vice President Hudson Motor Car Co., Member of Council of National Defense.

**Ralph Kaye** has been appointed manager of the advertising and publicity department of the Kissel Motor Car Co., Hartford, Wis. He was formerly connected with the Otto J. Koch Advertising Agency of Milwaukee and handled the Kissel Kar publicity while there.

**Howard A. Matthews**, treasurer of the Jackson Automobile Co., Jackson, Mich., finds time, aside from the business of manufacturing cars, to give personal attention to the Wolverine Eight sales campaign in New England, managed by Alfred H. Sowers, treasurer and general manager of the Jackson Motor Car Co., Boston, Mass. Mr. Matthews is president of the Boston company.

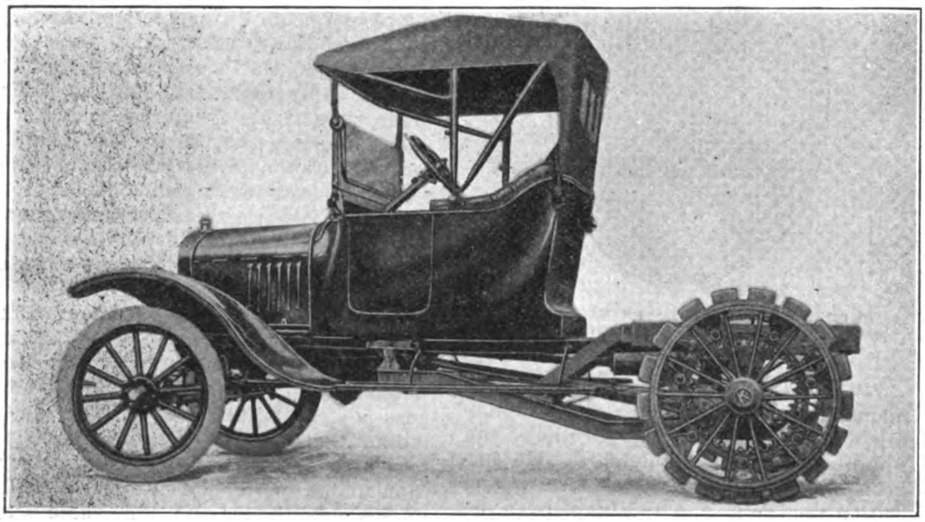
**Howard F. Coffin**, vice president of the Hudson Motor Car Co., from his position of leadership on the National Council of Defense, gave the industry and all business a resounding statement recently, telling the country that too much retrenchment would be far more disastrous than undue waste, the purport of which lingers effectively with the whole business fabric of the nations. Coker F. Clarkson, general manager of the Society of Automotive Engineers; Alfred Reeves, general manager of the National Automobile Chamber of Commerce; Andrew L. Riker, chief engineer of the Locomobile Company of America, are others associated in the big defense council.

Alfred H. Sowers, Treasurer and General Manager Jackson Motor Car Co., Boston, Mass.

**W. Owen Thomas** and T. R. Thomas have organized the firm of Thomas & Thomas, engineering specialists in the tomotive industry, and have established a laboratory in the Garfield building, 864 Woodward avenue, Detroit. Prior to the outbreak of the European war the firm of Thomas & Thomas had offices in New York and London and acted as consulting engineers for many of the leading automobile manufacturers of the world.

**Mr. C. M. McCreery**, formerly assistant manager of the Chicago district of the Goodyear Tire and Rubber Co., Akron, O., it is announced, is now special manufacturers' representative for that district.

# THE KNICKERBOCKER FORMA-TRACTOR UNITS

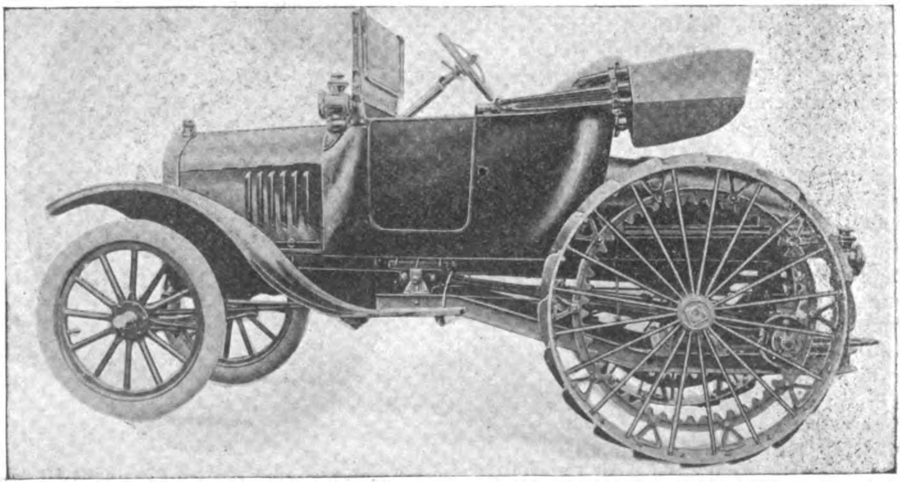


**Ford Runabout Converted Into a 3½-Ton Tractor for Use with a Semi-Trailer with a Knickerbocker Unit—Can Be Quickly Reconverted.**

CONVERSION units that are designed to transform small automobile chassis into tractors that are intensely practical for much of the work for which animals are used on farms, or for hauling freight with semi-trailer bodies that will have capacity not exceeding 7000 pounds, are now being produced commercially by Knickerbocker Motors, Inc., New York City, the general offices of the concern being at 170 Broadway. Both units are known as "Forma-Tractor," and while in general principle of adaptation they are similar, they differ materially in construction. The unit intended for farming operations can be utilized with Ford chassis, of which there are more than a million in America. This will be first described.

An accompanying illustration shows a tractor hauling two plows in a field on Long Island. Two stout horses could haul these plows, but the tractor was doing it so much faster that the claim of the manufacturer of "three-horse pull" was not questioned. In fact, the tractor did more and better work than a four-horse team in the same field. The demonstration was to learn the actual capacity of the tractor in normal work. Two of the strongest recommendations for the "Forma-Tractor" farm unit are its simplicity and low cost, the price of $178 being considerably less than one would pay for a sound farm horse. The unit is heavily built and ought to endure for years with even the ordinary care that might be given farm machinery.

The "Forma-Tractor" frame consists of a heavy steel channel section that is formed like a deep letter U, having the side and end members in a single piece, the bottom of the U being practically straight and the corners sharply curved. The ends of the side members are straight with reference to a horizontal plane, but between these ends there is a long section at an angle to the plane, so that when the frame side members are attached beneath the side members of the car chassis frame the rear end of the U will be below the car rear axle. The general shape of the frame may be noted in the accompanying illustration. From the centre of the rear member of the unit frame, or the bottom of the U, two arms of a heavy V shaped steel forging extend diagonally to two steel L section cross members, the ends of which project at either side of the frame.



**Ford Runabout Converted Into a Light Farm Tractor with a Knickerbocker Unit—Can Be Reconverted in 15 Minutes.**

Riveted to these cross members, at either side of both frame side members, are very heavy cast steel brackets that have at the upper ends large eyes that are in precise alignment. In the tops of each of these brackets, which are split, are clamping bolts and lock nuts. Riveted outside the frame side members, directly back of the cross members, are heavy lugs that serve as seats for the rear axle of the Ford chassis, and to which the axle is secured by clips that encircle it and generally resemble spring clips.

The four brackets on the frame cross members receive the stub shafts on which the tractor wheels are mounted, and in these the shafts are adjustable. The wheels are steel rings or bands 10 inches width, each having a steel hub and 20 round steel rod spokes that are staggered alternately around the hubs and the inner circumference of the rims. The hubs are fitted to the stub shafts and need not be removed unless for cleaning, for the shafts can be lubricated without removal. There are means for adjusting when this is necessary. On the faces of the rims, which are 42 inches diameter, are bolted diagonally steel angle cleats that are 1½ inches depth, making the outside diameter of the cleated wheels 45 inches. These cleats are removable when the machine is used upon highways, but they are often necessary to obtain traction in soft earth.

Bolted to the inner peripheries of the wheels, spaced equi distant, are 10 triangular brackets, and to the apexes of these are bolted the sections of large internal ring gears, which in the terms of tractor engineering are known as "bull gears," and by which the tractor wheels are driven with roller pinions that are keyed to the driving shafts of the Ford rear axle after the wheels are removed.

The master gear of the Ford axle differential gearset has 40 teeth and the driving pinion 12 teeth, this giving a normal reduction of 3 1/3 to 1. The ratio of the pinions and the bull gears affords, with the differential gearset reduction, a total reduction of 48 to 1, and this will drive the machine as a tractor at speeds ranging from two to three miles an hour. The roller pinions and the bull gears are not enclosed, but the pinions are self-cleaning and they will endure a long period because the work is very slow. The pinions can be replaced at a very small cost whenever necessary.

### Water Pump Insures Engine Cooling.

The Ford engine has a rating of 22.5 by the S. A. E. horsepower formula, and it will develop at maximum speed approximately 30 horsepower. Normally, it is cooled by a thermo-syphon circulation of water, but when driven slowly there is not sufficient draft of air through the radiator to insure adequate cooling. To obviate the engine heating a water pump is provided with the tractor equipment that can be installed without change of the general engine assembly, which compensates for the reduction of radiation by more rapid flow of water through the cylinder jackets. When once installed there is no need of changing the water pump if the machine is used for road work.

The assembly of the tractor with the chassis is a work that can be done in a very short time. First the rear fenders and running boards are removed, and the latter are replaced with short boards in the same brackets. The rear of the chassis is jacked and with a wheel puller, which is supplied with the tractor outfit, the wheels are removed from the driving shafts. The roller pinions are then keyed and locked on the ends of the shafts. Next the forward ends of the side members of the unit frame are carried under the chassis until the rear axle can be lowered on the seats of the brackets on the frame side members. The forward ends of the frame side members are clamped to the chassis frame and the rear axle to the seats on the frame. The axle stubs are next placed in the eyes of the four brackets on the unit frame cross member, and the roller pinions meshed with the bull gears. When the desired relation is obtained the clamping bolts of the brackets are secured and the nuts locked. With the installation of the water pump the assembly of the tractor is complete. No holes are bored in the chassis frame and the original construction is unchanged.

After assembly, should there be desire to use the chassis for regular road driving, the tractor frame is jacked and the clamping bolts of the stub axles are loosened and the axle withdrawn. The locking nuts of the driving shafts are removed, the keys taken out and the roller pinions withdrawn from the shafts. The frame remains attached to the chassis frame and axle. By replacing the regular wheels of the chassis on the rear axle driving shafts the machine is ready for road driving. To reconvert the car to a tractor the work described is reversed.

The unit complete weighs 650 pounds. As a tractor the machine has 84 inch wheelbase and can be turned in a 25-foot circle without backing. The road clearance is 13 inches. With the gear reduction of the tractor the pull is maintained by the manufacturer to be equal to that of 12 Ford chassis driven in highest speed ratio, and the pull at the drawbar, which is at the centre of the V shape reinforcing plate at the rear frame member, is 1200 pounds, or eight horsepower.

### The Road Tractor Unit.

The road tractor unit differs somewhat from the farm unit in that the frame is not made from a single piece of steel channel section, but has two side sections that are similarly formed, there being a heavy cross member riveted to the rear ends and another cross section to insure rigidty. There are two additional shorter side members that are riveted to the main side members about the centre of the angular sections of each, that extend at an angle of approximately 53 degrees from the lines of the side members. The ends of these short sections are shaped for a short length to parallel the main side members. The effect of this construction is a fork or yoke with one short and one long arm, as will be noted in the illustration of the chassis fitted with this unit.

The wheels are all metal, having cast hubs and steel rod spokes and wide rims. On these rims are either block or solid band tires 34 inches diameter and five inches width. These wheels are fitted with large roller bearings and are on a drop forged steel axle that is rectangular in shape and has spindles 2½ inches diameter. The frame is suspended from this axle on heavy brackets and the rear end extends slightly back of the axle. On the axle are mounted on heavy seats a pair of semi-elliptic springs 28 inches length and 2½ inches width that have seven leaves. The springs have but little camber and the leaves are long and are tapered pronouncedly to have a sufficient degree of elasticity. On these springs is carried a rectangular frame of heavy channel section steel that is reinforced and gusseted, the side members of which extend forward and into these, when assembled, the rear ends of the short side members telescope, there being a determined degree of "float," so that the rectangular frame may move with the deflexion or reflection of the springs carrying it. On this frame may be mounted the turntable or fifth wheel on which the forward end of the semi-trailer is carried.

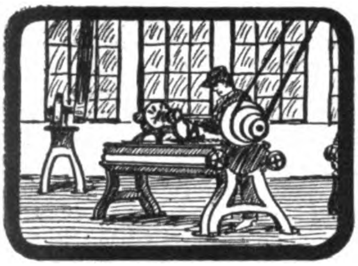
On the steel rims of the wheels are seven heavy steel lugs that are spaced equi-distant, to which are bolted large internal ring gears that are easily removable and may be replaced when worn. The forward ends of the side members are fitted as are those of the farm unit, to be clamped to the chassis frame. In installing this unit the rear fenders are taken off and the wheels removed. The unit is then carried forward until the rear axle of the chassis can be placed on seats on the lower side frame members, to which it is bolted. The wheels of the tractor unit must, of course, be off. After the axle is clamped to the frame roller, pinions are keyed and locked on the ends of the driving shafts with nuts, and then the tractor wheels are installed, the pinions meshing with the internal gears. With the sprockets are included brake drums in which the shoes regularly fitted to the axle expand, and these are coupled with extensions of the linkage with the emergency brake lever. The gear ratio is 14:1 on high and the speed may be from five to 10 miles an hour. The wheelbase is 102 inches and the tread 61 inches. The engine is fitted with a circulating pump and a sight feed oiler. With this unit 1¼ tons are carried on the tractor and 2¼ tons on the semi-trailer. The price is $338 f. o. b. New York City.

Tractor Adapted from Ford Runabout and Knickerbocker Unit, Hauling Two 14-Inch Plows on Long Island Farm.

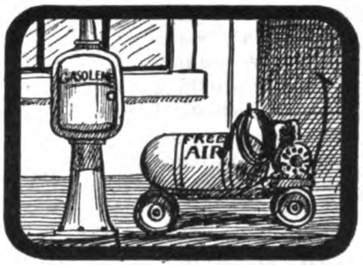
Thousands of farmers and business men own Ford chassis that can be converted to farm or road tractors with Knickerbocker units at small expense. Such conversions will greatly increase the utilitarian value of the machines to the owners, for they can be used for either field or road work as tractors or as pleasure cars, as the conversions as desired can be made, according to the claims of the manufacturer, in 15 minutes, and at a comparatively small investment a man can have a car, field or road tractor, and can haul heavy loads at surprising economy.

## FAMOUS TRUCK COMPANY BUILDING PLANT.

The Famous Truck Co., Inc., St. Joseph, Mich., is building a wood working plant in that city which will have 10,000 square feet of floor space. The building is located near the Palmer Rubber Co.'s plant on Broad street. It is understood that this structure will be a temporary plant and will later be replaced with a modern automobile factory.



# GARAGE EQUIPMENT



### PORTABLE BENCHES.

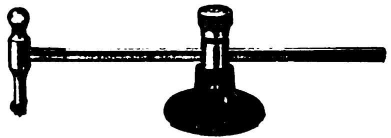
Since the repair shop in most garages is in a different section of the shop than the section in which the cars are stored, much time may be saved that is frequently spent by the repair man in going back and forth from the car to the shop for tools, and to do bench work. The illustration shows what is termed the quick action portable bench No. 1. It is designed to be wheeled to the car. The general construction of the bench is plainly seen from the cut. It is light, strong and rigid, easily steered by the roller bearing castors while being moved. The top is solid oak, the legs and upper cross pieces are steel angles. The lower cross pieces, as well as the wheels, are cast iron. By a special device the stand may be locked in standing position. With the exception of the vise the bench is equipped as shown.

**Manufactured by the United Engine and Manufacturing Co., Hanover, Penn. Price and catalogue of shop tools upon request.**

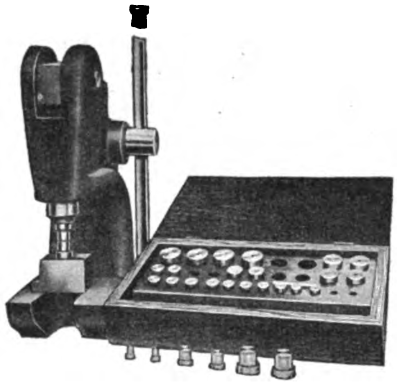
### CYLINDER REAMER AND JIG.

There is a constant call on repair shops for the reboring of cylinders. As the efficiency of any engine is greatly impaired by scores, or cylinders that have been worn out of round, practically the only repair in many cases is the reboring of the cylinders and replacement of the old pistons with oversized pistons. Illustrated herewith is a reamer and jig for the reboring of Ford, Metz and Buick 3¾ inch cylinders 1/32 inch oversize. This reamer is fitted with inserted tool steel blades designed to cut on the end of the blade. The tool centres itself and the jig will square the reamer, thus giving a perfect bore. It is said that owing to the simplicity of operation and because of the centering feature it does not require experienced labor to operate it.

**Manufactured by the G. H. Dyer Co., Cambridge, Mass. Price upon application.**



Circular Glass Cutter.



### BEACH BUSHING PRESS.

It is safe to say that nearly one-fifth of the expense and labor in overhauling an automobile goes into the repair or replacement of the bushings. The Beach process bushing press outfit consists of a small press having a 30-ton pressure capacity, and a set of swedges in all sizes from 7/16 inch to 1 3/16 inch, an outfit which will handle practically all the bushings now in use. The operation of the press is simple and in most cases it it unnecessary to remove the bushing from the piece. The proper size swedges are placed in the bushing, the bushing then placed in the press and pressure applied. All that then remains to be done is to ream out the bushing to fit. The press saves the outlay for a stock of metal or cored bushing material, as in most cases the old bushings may be used over again. It is claimed that bearings last longer after this treatment because of the harder and closer grain imparted to the metal by the extreme pressure of swedging.

**Marketed by the Greb Co., 202 State St., Boston, Mass. Write for price and catalogue.**

### CIRCULAR GLASS CUTTER.

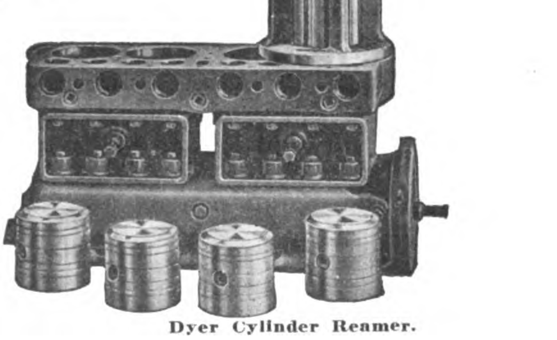
There is a constant call for replacement of headlight glasses that are so frequently cracked or broken, yet very few garages are equipped to cut circular glasses for replacement with any degree of accuracy or speed. The glass cutter shown in the illustration has a graduated beam that can be quickly and firmly set to cut circles of any size from two to 12 inches in diameter. Each of the cutters is provided with a high grade cutter wheel which has been carefully honed and tested by actual cutting before being mounted in the tool. The standard is equipped with a rubber base to prevent slipping.

**Manufactured by Goodell-Pratt Co., Greenfield, Mass. Price, 70 cents.**

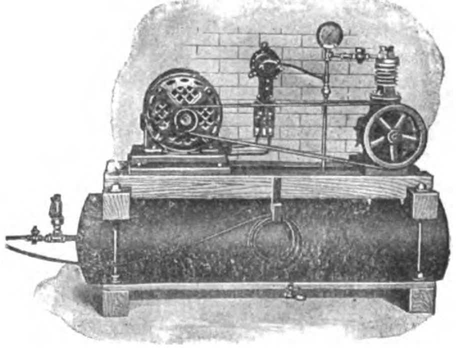
### FREE AIR UNIT.

It is pretty generally conceded that the free air service is an attraction for any garage, whether large or small, and oftentimes such service brings steady customers. The Gardner automatic free air unit consists of a two by 2½ air cooled, splash lubricated air pump bolted to a ½ horsepower electric motor and mounted on an oak frame. An endless belt is used and the motor is mounted on a slid-

Portable Work Bench.



Dyer Cylinder Reamer.



Gardner Free Air Unit.

ing base for the purpose of taking up any slack in the belt that may be caused from use.

The frame is very securely bolted around the air tank and designed to prevent the danger of warping. An automatic controlling device, mounted between the pump and motor, starts and stops the motor automatically as the pressure falls and rises in the receiver. With the unit may be furnished all necessary connections and gauges complete for installation. The motor can be furnished to operate on either alternating 60 cycle single phase or direct current.

**Manufactured by the Gardner Governor Co., 126 Williamson St., Quincy, Ill. Send for catalogue and prices.**

### GARAGE BOOKKEEPING.

Though many garage owners make every effort to install the most efficient machinery in the work rooms and to further the standard of workmanship without increasing the cost, many others fail to realize the value of an efficient and up-to-date accounting system. The bookkeeping question is just as important a part of the business as is the shop. Without it the profit is sure to decrease and the owner is unable to quote prices with any basis for computation. Illustrated herewith is a garage bookkeeping outfit designed for garage keepers. This system is said to be complete in every detail and is the result of much careful study by specialists in that line. The publishers make a specialty of systems for garages and repair shops and gladly give advice free. The value of such service may be appreciated by such garage owners as require a simple but efficient check upon the business.

**The Thomas J. Harton & Co., Inc., Church and Worth Sts., New York. Write for details and prices. Advice free.**

### THE CALCULAGRAPH.

The Calculagraph.

"Time is money," whether it is a customer's money or dealer's it makes no difference; it all comes from the cash drawer in the end if the proprietor runs a repair shop. Much of the dissatisfaction caused by large repair bills might be avoided if the owner were shown an accurate time record of all work done on the car. The Calculagraph is a time recorder, practical for any repair shop where the importance of time is to be considered. By the use of it the owner can keep in touch with all work done, the extent of the jobs, the time each man arrives in the morning, and, in fact, keep a permanent check system on the whole shop as a whole or in part. The record is indisputable, and must be accurate as no dependence is placed upon the memory of the employees. It is what might be termed "A cash register of time."

**Manufactured by Calculagraph Co., 1476 Jewelers' Bldg., New York City. Send for prices and literature.**

### THE SHOTWELL METHOD.

In the Shotwell method of handling hazardous liquids a number of fundamental advantages are found. The pump is of improved design, embodying a sliding block and cross head, affording large wearing surfaces, insuring long life and making it possible to operate pump constantly in one direction without having to reverse the stroke. It is claimed that the pump is accurate and delivers an exactly measured volume of liquid, which can neither be increased or decreased through negligence, design or mechanical wear and tear. All working mechanism is completely enclosed, thereby keeping out dirt, which might tend to rapidly cut and wear the parts. Another feature which stands out as a distinctive advantage is the accessible foot valve, which is situated directly above instead of inside the tank, and is easily accessible through a cast iron manhole box, with a hinged top. This makes it easy to clean the valves and intake screen.

**Manufactured by Shotwell Pump and Tank Co., 27 North Alabama St., Indianapolis, Ind. Write for catalogue.**

### SPRING WINDER.

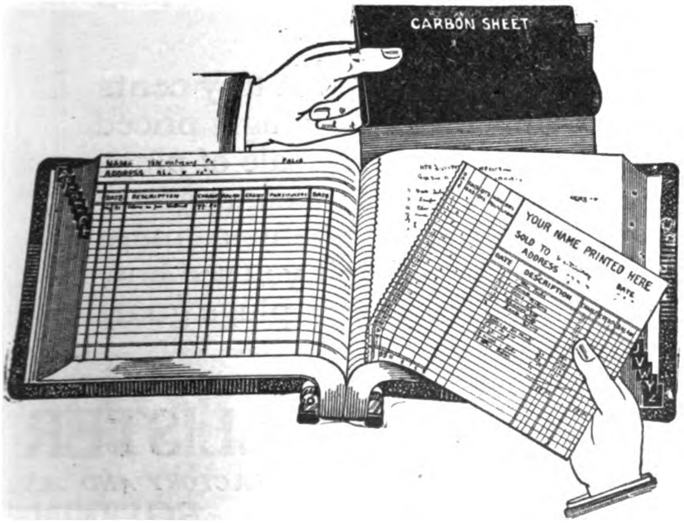
The Hjorth Perfection Spring Winder is a tool that is adapted to wind springs of any length, diameter or pitch from any gauge of wire up to 5/16 inch. It is adapted to wind taper, double taper and left hand springs equally well. It may be used in connection with vise, lathe or drill press and will use flat or square wire up to its capacity.

**Manufactured by Hjorth Lathe and Tool Co., 27 School St., Boston, Mass. Prices range from $1 to $4 according to size.**

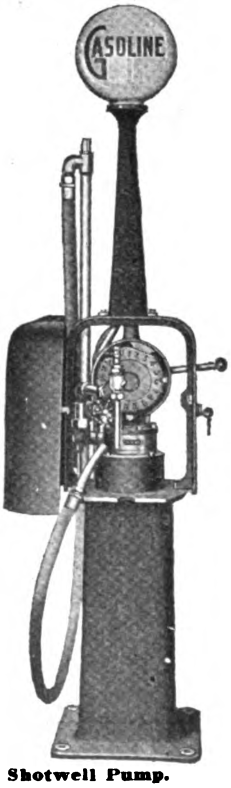
### TOOL CABINET.

In every garage and repair shop many valuable tools are mislaid or lost. The H. & H. tool cabinet provides a safe place where such tools may be kept under lock and key. The workman's time is not wasted searching for tools which have been left on the bench for lack of place to put them when not in use. These cabinets are made of cold rolled sheet steel and when ordered in quantities can be made with any desired arrangement of partitions or shelves. They are arranged for use with a padlock and fitted with spring hinges, which keep the door closed at all times. The finish is either black or olive green enamel, baked on. Stock size is seven inches deep, 12 inches wide and 18½ inches high.

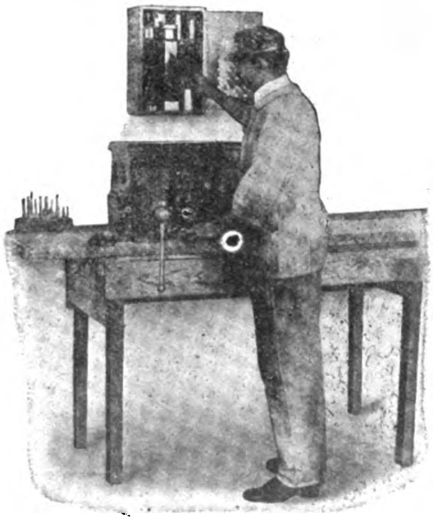
**Manufactured by the Hart & Hutchinson Co., New Britain, Conn. Write for prices and catalogue.**



Garage Bookkeeping System.

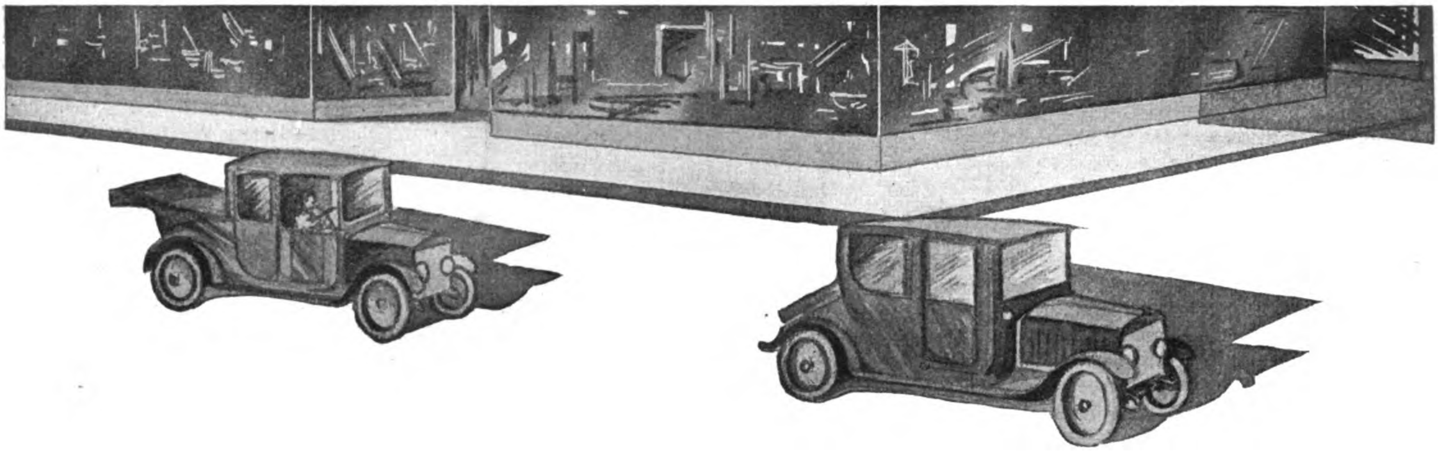


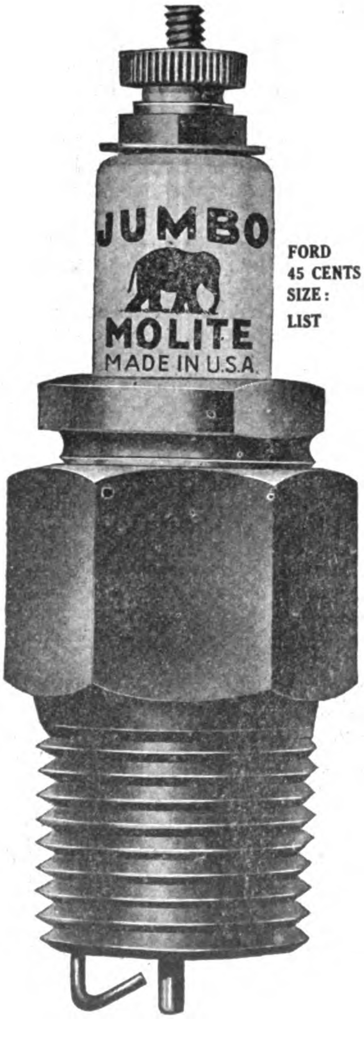
Shotwell Pump.



Using a Tool Cabinet.

What 50¢ Will Do





FORD
45 CENTS
SIZE:
LIST

"What will the fifty cent price on Jumbo Spark Plugs mean to the dealer?" is a question we have been asked following our announcement of the big drop in price.

Here is the answer.

The fifty cent price on a high grade plug of established reputation and merit will permit dealers to make more sales on a smaller investment with a greater total profit.

It works out this way:

You carry several lines of spark plugs now. Each line means several styles and sizes to be stocked. With the prices all high, a few car owners have a slight preference for each kind, but no one plug stands out "big."

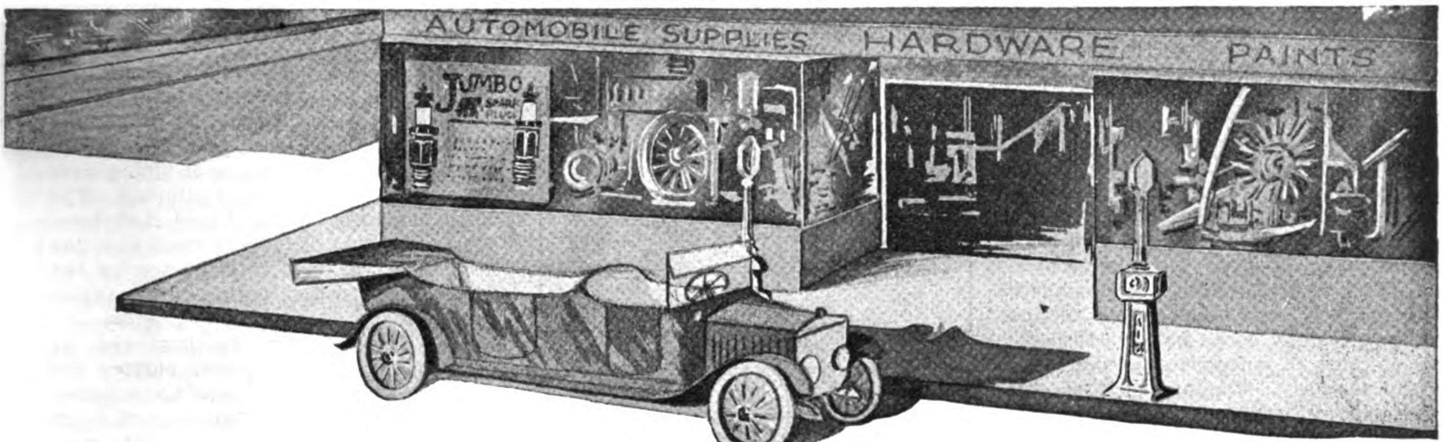
With a highest grade plug to be had at fifty cents do you think many car owners will buy high priced plugs? Don't you see how you focus the sale of plugs to this one line, meaning that you can concentrate your buying, make a smaller investment, a more rapid turn over and more profit? Don't you see how much easier it will be to sell fifty cent plugs guaranteed for the life of the car?

**GIBSON-HOLLISTER**

PACIFIC COAST BRANCH:
Los Angeles, Cal.

*FACTORY AND GEN*
***BOSTON,***

# For Your Store

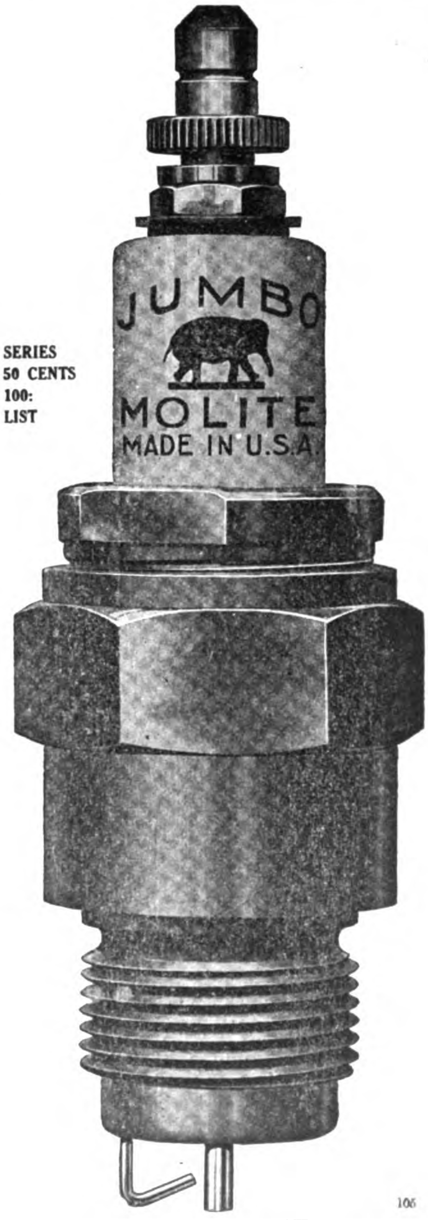


Already our results are proving that a high grade plug sold at a low price is what dealers have needed to weed out their accessory stocks and to standardize on one big seller. There will always be some demand for one or two of the other well known plugs, but the leader will be Jumbo.

So we say to you now, the fifty cent price will make more money for you—it will furnish a new, big sales point, it will cut down the number of plugs you will have to stock, it will let you handle all your plug business on a smaller investment, and it will keep your customers satisfied.

Jumbo advertising and dealer service will go on in ever increasing effectiveness, driving home the message of Jumbo construction and tying up that message to our dealers.

Now is the time for jobbers to get in touch with us and for dealers to get their jobber's proposition.



SERIES
50 CENTS
100:
LIST

**Regarding Our Campaign of Consumer Advertising**

In order to enable the trade properly to prepare for the volume of business which our consumer advertising will create we have decided to defer until a later date our advertising campaign in the "Saturday Evening Post" and other mediums.

Although in making this decision we are undoubtedly sacrificing some immediate business, we nevertheless feel that in doing so we are acting for the best interests of the trade at large.

**Now** is the time to arrange for **your** stock. Don't wait to be a conscript! Be a volunteer and send your order in now!

## MANUFACTURING CO.

*ERAL SALES OFFICES;*
***MASS.***

CENTRAL STATES BRANCH:
St. Louis, Mo.

106

# Labor and Money Saving Suggestions for the Motor Car Repairman

### REPAIRING A WINDSHIELD.

(Figure 10.)

A New Jersey reader repaired a cracked windshield in the manner described in the following: He cut out of a piece of old leather two discs of a size suitable for the purpose and drilled a hole in centre of each. Next he secured two metal discs the diameters of which were slightly less than those of the leather discs and bored holes in the centres of these to correspond to the holes in the leathers. Placing the discs on either side of the glass, with the leathers innermost, he inserted a small bolt and fastened with a nut. While the repair was not particularly conducive to fine appearance, it at least had the merit of being very practical and serviceable and gave every insurance of enduring for a long time.

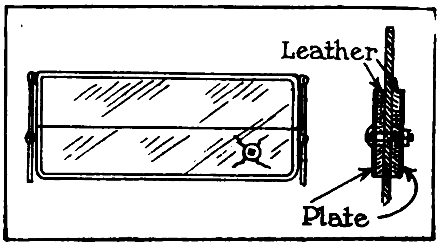


Fig. 10—Repairing Windshield.

### HOLDING SMOOTH SHAFTS.

(Figure 12.)

Holding or turning smooth round shafts is difficult. Utilizing a pipe wrench for the purpose is likely to result in damaging the metal, especially if considerable pressure is necessary to turn the shaft. Gripping it in a vise is not satisfactory because it will turn as soon as much leverage is applied. A simple method of turning such a shaft is illustrated in the sketch. It consists of winding a piece of strong rope around the end of a stick of wood and then around the shaft, either holding the ends of the rope in the hand or fastening to some convenient anchorage. If the wood is sufficiently long great leverage can be brought to bear and the most obstinate shaft will turn under the pressure and without danger of damaging its surface. However, if the shaft is unusually hard to start it is well to cover it with a layer of cloth or rubber to prevent possible abrasions.

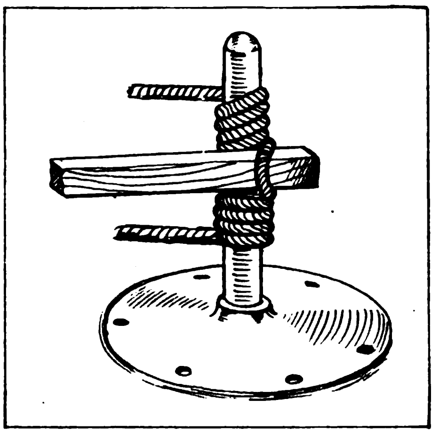


Fig. 12—Holding Smooth Shaft.

### HOME MADE RATCHET DRILL.

(Figure 13.)

If you have need of a ratchet drill and want to make it yourself, here is one way to do it. The frame should be made by a blacksmith and in the shape shown in sketch. It should be bored to take two large coach screws for the purpose of fastening to a wall. An old milling cutter should be annealed for the ratchet and keyed on the drill spindle. A piece of strap iron should be bent in the form of a U and one end drilled and tapped to take the handle. Fit a dog with a pivoted pin and attach a spring for control, one end being secured. The feed screw can be made of round stock, threaded to pass through the frame, and the lower end recessed to fit the top of the drill spindle. A piece of piping used as in sketch will prevent slipping. The arrangement of the hand feed is obvious. As the ratchet is moved clockwise the tension of the drill is tightened by the feed screw, which turns in the same direction.

The device might be improved by welding a Y to the power part of the frame, which not only would strengthen it, but permit easy handling of large pieces of work. The tool should prove superior to a breast drill and save considerable time and labor.

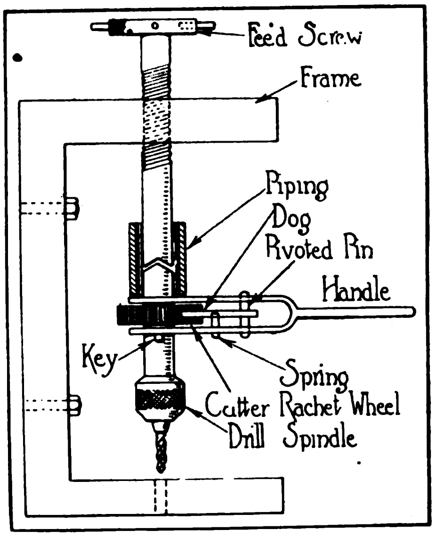


Fig. 13—Home Made Ratchet Drill.

### ADJUSTABLE TAPPETS.

(Figure 11.)

On small engines the valve stem is not adjustable. As soon as the valve begins to wear the clearance between the valve stem and the tappet begins to increase, with a resulting loss of power. To remedy this it is usual to draw out the valve stem. There are devices on the market which in their way make an adjustment possible. The following hint, however, may be found to work out to advantage for the small car owner.

Remove all the tappets from the engine and bore a hole in the end of each, about ⅝ inch deep and as large in diameter as is consistent with the diameter of the tappet shank. Cut A shows a cross section of the tappet.

Have a machinist to turn up about 50 tool steel buttons such as are shown at B. The outside of the head should be equal to the outside diameter of the tappet shank. The diameter of the shank of the button should be such as to form a smooth fit with the hole drilled in the tappet. The height of the head should be about ⅛ inch. Put tappets back in engine and fit B into place, as shown at C. Adjust valves by filing so as to get the proper clearance between the buttons on head of tappets and the valve shanks. As soon as this is accomplished remove buttons and harden them.

When the valve adjustment becomes so worn as to require closer adjustment all that will be necessary is to remove the old button, insert a new one which has a higher head, harden and the job is done without pulling out the valves every time.

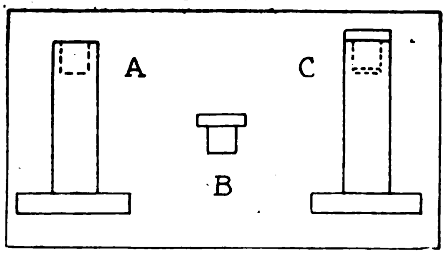


Fig. 11—Adjustable Tappets.

**When you are tightening nuts bear in mind that a fine thread screw or nut requires less force than one having coarse threads.**

### PISTON RING COMPRESSOR.

(Figure 14.)

The accompanying illustration shows a handy tool for the man overhauling his own engine and its construction calls for materials to be found around any garage. The device consists of a piece of sheet iron about 12 inches long, one inch wide and 1/16 inch thick; a pair of old pliers and two wire nails. The tool is used for compressing obstinate piston rings so that they may be slipped into the cylinders.

Bend the sheet iron around the piston and then bend back the ends, forming a nearly complete circle, as shown at A. The distance between the turned back ends should be about ½ inch. The ends should be about ⅝ inch long.

Figure D shows the method of filing the nails to form shoulders. Bore holes in the ends of the sheet iron ring and rivet the nails in place as shown at A. Bore holes in the jaws of a pair of pliers as shown at B. These holes should be large enough to receive the nails easily.

The assembly of the tool is shown at C. Slip over the piston, squeeze the pliers and the most obstinate piston ring will be compressed. With the tool in place the piston can be forced home, the next ring compressed and forced in, and so on until all the rings have passed into the cylinder.

The pliers may be removed from the ring at any time and used for other work. The two small holes in the jaws will not impair their usefulness.

### REMOVING BROKEN KEY.

(Figure 15.)

Once in a while the head of a key, by rough usage, breaks off while it is still in its place. Although the key may not be seated very firmly, the removal becomes a problem. Try the method used in our sketch; it may help in its removal.

About ¼ inch from the end, or about where the head began, file a groove across the key at right angles to it and about 3/32 inch deep. Fit into this groove a piece of steel, as shown in the cut, screwing same to key.

In the illustration, B represents the broken key, A the inserted repair piece. This new head will give much greater purchase than could be obtained with clamps, and does not materially effect the strength of the portion of key remaining. It will be a good plan to throw away the key after removing and replace with a new one.

### DRILL PROTECTOR.

(Figure 16.)

Our sketch shows a contrivance for preventing breakage of drills when boring small holes, such as .125 and .0625 diameters. In such work considerable pressure is required to make the tool cut and frequently the drills snap like glass. The device consists of a piece of hard wood, about five inches shorter than the projecting end of the drill when it is in a chuck. There is a hole through the centre, and the block is attached as shown. With this protector one can exert three or four times the ordinary pressure with safety.

A holder for broken twist drills is shown at B. These are not very costly and make valuable equipment. Frequently high speed drills become broken and thrown away because the workman has no means of utilizing them. This suggested device is designed to obviate that waste. A hole is bored in the holder the size of the drill and set screws with rounded points are placed opposite each other. These enter the flutes of the tool and make a positive drive. The other end of the holder is turned to fit the chuck.

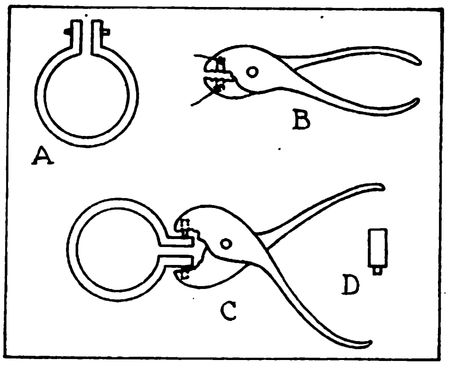


Fig. 14—Device for Compressing Piston Rings.

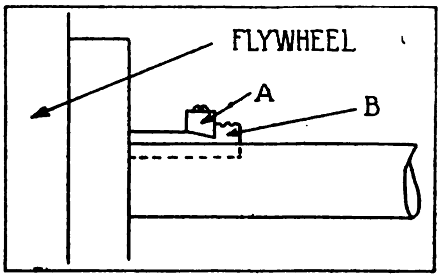


Fig. 15—Removal of Broken Key.

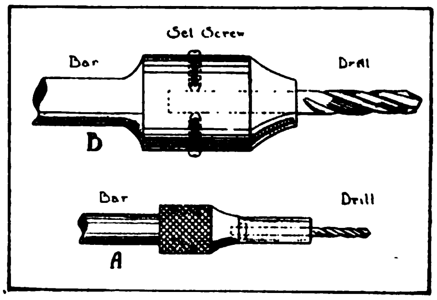


Fig. 16—Drill Protector.

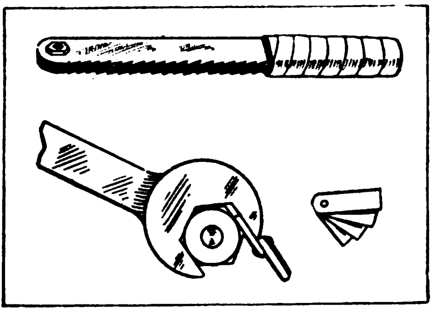


Fig. 17—Two Handy Tools.

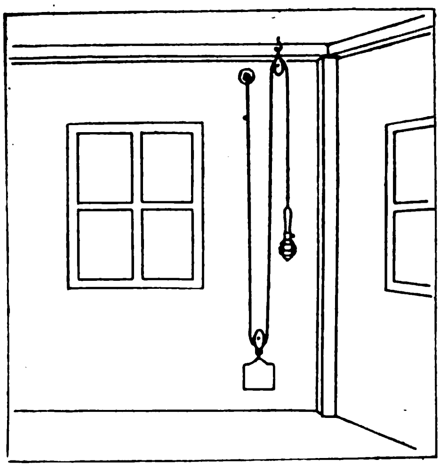


Fig. 18—Arrangement for Keeping Portable Light from the Floor.

### HACKSAW BLADE RASP.

(Figure 17.)

A handy rasp can be made of discarded hacksaw blades in the manner suggested in the illustration at the top of the sketch. Such a tool is a very convenient device to have in the garage or on the road, especially in making repairs to an inner tube. The tool consists of simply bolting five or six old blades together at one end and covering the other end with friction tape to make a handle.

### PORTABLE LIGHTS.

(Figure 18.)

If the flexible wire of a portable light in a garage is constantly getting in the way the insulation is liable to be worn off and consequently short circuits develop. It is an easy matter to remedy this evil and to provide a portable light, which may be kept hanging from the ceiling when not in use under the car.

Locate the attachment plug near the ceiling on one side or in one corner of the garage. Slip one end of the flexible wire through two blocks, the kind that are sold to hold hammocks, and to one of the blocks fasten a light weight sufficiently heavy to balance the portable light. The other block should be hung on a screw eye fastened in the ceiling near the attachment plug. Attach the portable light to one end and the attachment plug to the other end of the flexible wire and the apparatus is completed.

The flexible wire passes from the attachment plug to the weight, through the weight block to the ceiling, through the ceiling block to the portable light. When the light is used it is pulled down and the weight rises; as soon as the light is released the weight pulls it to the ceiling and out of the way.

### A WRENCH "HANDY-BOY."

(Figure 17.)

The repair man who uses the device shown in the sketch called it his "Handy-Boy," and he seems so fond of it that he carries it in his pocket. The device consists of a number of pieces of an old band saw pivoted together on a rivet, and it is used to secure a tight fit on an odd size nut when there is no S wrench of the proper size at hand. Its method of use is clearly illustrated, one or more of the strips of metal being used as a packing, as shown.

# NEW CONCERNS RECENTLY INCORPORATED.

## Monthly Record of New Business Houses for which Charters Have Been Issued In the Various States and Classified According To Nature of Business.

### Dealers in Automobiles and Motor Trucks

**Chicago, Ill.;** The American Automatic Ordnance Co.; $250,000; R. Cole, K. S. Wilson.

**Oak Park, Ill.;** Boulevard Motors Co.; $40,000; to deal in automobiles.

**Kokomo, Ind.;** The Dickey Motor Car Co.; $25,000; to buy and sell motor cars; George W. Dickey, Charles W. Hale, Geneve E. Maloney.

**Indianapolis, Ind.;** The Lexington Motor Sales Co.; $25,000; to deal in automobiles; Frank B. Ansted, William F. Thomas, Charles D. Finney.

**Biddeford, Me.;** F. L. Hammond Corp.; $10,000; to act as Maine distributors of the Marion-Handley Six.

**Boston, Mass.;** C. E. Fay Co.; $100,000; to deal in motor vehicles; Charles Watertown, Ernest H. M. Evans, Allen M. Fay.

**Worcester, Mass.;** Blake-Libby Co.; $25,000; to deal in motor vehicles; Eldredge O. Blake, E. Libby, Hanson M. Savage.

**Muskegon, Mich.;** Frank E. Hathaway, Inc.; $50,000; to distribute Dodge Brothers, Saxon and Paige cars; Frank E. Hathaway, Edna M. Hathaway, Francis R. Stevenson.

**St. Joseph, Mo.;** Robinson Cadillac Motor Car Co.; $10,000; to deal in autos.

**Asbury Park, N. J.;** Sexton's Garage Co., 403 Munroe avenue; $25,000; to conduct an automobile and garage business.

**Camden, N. J.;** Gawthrop & Wister Co.; $50,000; to conduct general business.

**Mt. Holly, N. J.;** Chalmers-Sutter Co., 301 Union St.; $50,000; to conduct a general automobile business.

**Passaic, N. J.;** The Passaic Motor and Supply Co.; $10,000; to deal in automobiles, wagons, trucks; Samuel B. Dubrew, David H. Butz.

**Albany, N. Y.;** The Albany City Auto Co.; $10,000; to deal in automobiles, motors and accessories.

**Albany, N. Y.;** L. R. Mack, Amsterdam Corp.; $100,000; to deal in automobiles and to conduct a garage business; L. R. Mack, C. Collins, R. E. Hoffman.

**New York, N. Y.;** H. S. Black's Garage, Inc.; $15,000; to deal in automobiles, motorcycles and to conduct a garage; H. S. Black, J. E. Frazer, G. J. Wise.

**New York, N. Y.;** Gramm-Bernstein Sales Corp.; $50,000; H. Posner, H. Margoshes, A. A. Deutsch.

**New York, N. Y.;** Hamilton's Garage, Inc.; $5000; to deal in automobiles and to conduct a garage and repair shop; S. W. and R. Hamilton.

**Queens, N. Y.;** B. H. & B. Truck Corp.; $1200; Charles H. Bailey, Catherine R. Metzger, Henry B. Deyo.

**New York, N. Y.;** The Pyramid Operating Co., Inc.; $18,000; to deal in autos and motorcycles for hire and to conduct a garage; M. and E. S. Spiegel, H. Baboury.

**New York, N. Y.;** Inter-State Automobile Coach Works; $5000; to build, repair automobiles; George Spegler, Isaac Jacobs, Lee Billig.

**New York, N. Y.;** Jaros Trucking Co.; $3000; Hyman Spiro, Joseph Wald, Lena Jaroslawsky.

**New York, N. Y.;** Machine Gun Motor Transport Corp.; $5000; to deal in motor trucks; A. G. Chapple, H. R. Macdona.

**New York, N. Y.;** The Van Keuren Auto Sales Co.; $5000; to deal in automobiles; M. Vankeuren, R. T. Thompson.

**New York, N. Y.;** The Martin Garage, Inc.; $10,000; to deal in automobiles; Martin E. Bloom, Anna R. Bloom, Robert G. Luvin.

**New York, N. Y.;** Rosenstein, Simmonds & Co.; $500; to conduct a general agency and to deal in automobiles; Allen E. Moore, George P. Jebbett, F. H. Butehorn.

**Ossining, N. Y.;** Apex Auto Sales Co., Inc.; $25,000; to deal in automobiles and accessories; B. E. A. and E. R. Lent.

**Sherburne, N. Y.;** The John Benedict Co., Inc.; $30,000; to deal in automobiles and to conduct a garage; C. L. Boolittle, G. W. Benedict, J. N. Benedict.

**New Rockford, N. D.;** Hughes & Wheeler Auto Co.; $20,000; E. L. Hughes, C. L. Wheeler, Adel Hughes.

**Berea, O.;** The Overland-Berea Co.; $10,000; Orlin D. Chase.

**Canton, O.;** The Jobe-Conrad Motor Car Co.; $10,000; Clyde C. Jobe, Bernard J. Conrad, Ira A. Aunget, Carrie E. Jobe, Ella Aunget.

**Cleveland, O.;** The Forster Mfg. Co.; $30,000; Sterling Newell, Ernest Angell, W. L. Fleming, Andrew P. Martin, C. C. Ownes.

**Cleveland, O.;** The S. & N. Sales Co.; to deal in automobiles; Richard H. Lee, W. Paterson, Fleming H. Crew, Frank W. Caldwell, G. M. Gallagher.

**Cleveland, O.;** Motor Truck Sales Co.; $25,000; Henry J. Foster, Herbert D. Andrews, Ivan Katzenstein.

**Columbus, O.;** The Automatic Control Trailer Co.; $25,000; S. A. Kinnear, John G. Price, H. C. Rogers, C. W. Seaman.

**Mineral Ridge, O.;** The Ridge Auto and Repair Co.; $2500; to deal in automobiles; E. W. Davis.

**Muskogee, Okla.;** Fast-Oswald Motor Co.; $10,000; to deal in automobiles; J. C. Fast, W. L. Oswalt, B. L. Fast.

**Springfield, O.;** The Best Taxi Cab Co.; $5000; John W. Teach.

**Tulsa, Okla.;** Scott Motor Co.; $10,000; W. A. Scott, S. H. Scott, L. J. Turner.

**Clarksville, Tenn.;** Royal Garage and Machine Co.; $10,000; to conduct a general automobile business; J. D. Fraughber, C. W. Rudolph, J. H. Smith, Jr., S. P. Gold, W. A. Chambers.

**Memphis, Tenn.;** Quality Motor Car Co.; $5000; Herbert Herf, I. Samuelson, Albert Miller, B. H. Gotthelf, Leo Goodman.

**Abilene, Tex.;** Duggen Brown Overland Co.; $30,000; to deal in automobiles.

**Abilene, Tex.;** Spaulding Automobile Co.; $10,000; to deal in automobiles.

**El Paso, Tex.;** The Arrow Automobile Co.; $3000; A. S. Gold, J. D. Page, P. E. Van Pelt.

**Lexington, Va.;** Blue Front Garage; $15,000; to deal in automobiles; president, J. N. Hotinger; secretary, F. W. McClure.

**Norfolk, Va.;** Interstate Sales Co., Inc.; $10,000; to deal in automobiles; L. R. Watson.

**Norfolk, Va.;** The Universal Auto Sales and Service Corp.; $10,000; to deal in automobiles and to conduct a service station; M. L. Levy.

**Charleston, W. Va.;** The Craig-Alderson Auto Co.; $20,000; to deal in automobiles.

**Wheeling, W. Va.;** The Wheeling Oakland Co.; $5000; to deal in autos; L. M. Kratzer, J. H. Honeysteel.

### Garages and Repair Shops Newly Chartered

**Chicago, Ill.;** Ashland Diversey Garage; $20,000; to conduct a garage and auto supply 'bus; O. W. Theel, G. E. Tarkington.

**Chicago, Ill.;** Marquette Garage and Livery Co.; $1500; Victor A. H. Murrell, Frank H. Whitten, George W. Pennington.

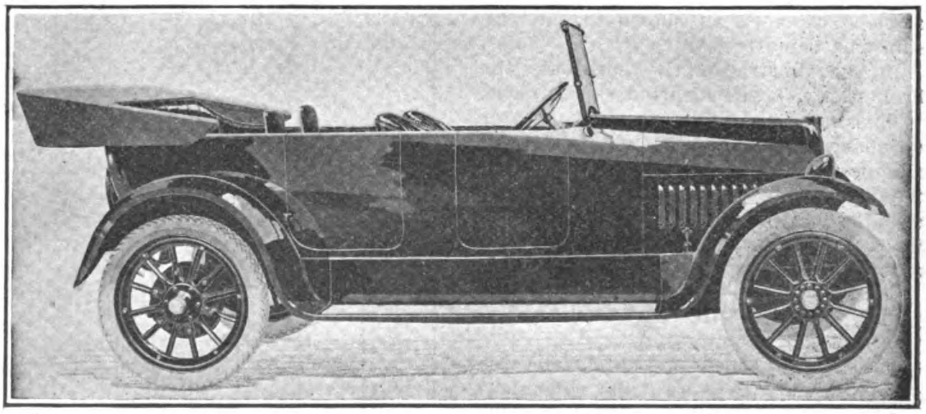
**Lowell, Mass.;** Moody Bridge Garage Co.; $10,000; Albert B. Anderson, Nils T. Kjellstrom, Alfred E. Sweet.

**Jersey City, N. J.;** Star Garage, Inc.; $8000; Peter Brodsky, Max Brodsky, John H. Scott.

**Brooklyn, N. Y.;** Garage, Inc.; $1000; Marsellino Barone, Guiseppe Carrizzo, Guiseppe Di Mateo.

**Kingston, N. Y.;** The Clinton Avenue Garage; $15,000; Fred W. Philips, Emma L. Philips, Norman A. Brown.

## *Case Model Forty Touring Car*



**The New Case Tourabout, Convertible Into a Seven-Passenger Car.**

**The Case 40 Five-Passenger Flexible Four, with L Head Engine Cast En Bloc, a Technical Description of Which Appeared in the Automobile Journal, March 10, 1917. The Case Flexible Four and Tourabout Is Manufactured by the J. I. Case Threshing Machine Co., Racine, Wis. The Two Models Are Mounted on the Same Type of Chassis and the Selling Price of $1190 Was Set on Both Models.**

**Wheelbase, 120 inches.**

**Engine, 3⅝x6, L head, 40-45 brake h. p.**

**Westinghouse, starting, igniting and lighting system.**

**Carburetor, of special design, fed by gravity from cowl tank.**

**Cooling, thermo-syphon.**

**Clutch, Cone.**

**Price, $1190, fully equipped, f. o. b. Racine, Wis.**

## Parts and Fittings Makers Incorporated

**Chicago, Ill.;** Wright Motor Co.; $500,000; to manufacture an internal combustion engine; Albert Scheible, Charles T. Cabrera, D. Rose.

**Greenup, Ill.;** The Greenup Automobile Co.; $5000; Henry Barger, J. W. Ward, Harry Hennine, Glen Kuffner.

**West Frankport, Ill.;** Frankport Auto Co.; $5000; R. M. Medill, Ralph Mitchell, Ezra Hindman.

**Mt. Vernon, N. Y.;** Seminole Garage, Inc.; $1000; Ludwig Diller, E. C. Jewett, Charles Clemensen.

**Albany, N. Y.;** Warren Garage Co.; $1000; Harris J. Fulton, John H. Fulton, Jr., James F. Armstrong.

**New York, N. Y.;** Equip-U Co.; $5000; to repair and equip automobiles; $5000; A. H. Brandt, J. P. Kenny, V. Vanness.

**New York, N. Y.;** Fryer-Auster Co., Inc.; $25,000; to conduct a garage; $25,000; C. H. Fryer, W. R. Brackett, H. A. Shaw.

**New York, N. Y.;** 125th Street Garage; $1000; to conduct an automobile garage; Joseph Harbater, Tillie F. Harbater, Isidore Foldstein.

**New York, N. Y.;** Six-Point Garage and Service Station; $2000; to conduct garage and deal in automobiles; Jacob Feldman, Mildred V. V. Feldman, Joseph Glant.

**New York, N. Y.;** The Stevens Duryea Service, Inc.; $15,000; to conduct a garage business; M. F. Kearns, F. Neilson, Fred Shultis.

**Queens, N. Y.;** McNutt Auto Livery, Inc.; $500; to conduct a garage; Henry T. McNutt, Elizabeth McNutt, Charles A. Woods.

**Wellsville, N. Y.;** Ritter Garage, Inc.; $50,000; William A. Ritter, S. D. Ritter, J. D. Ritter.

**Columbus, O.;** The Sloss Motor and Repair Co.; $5000; D. M. Strachan.

**Pawhuska, Okla.;** Osage Garage; $5000; to conduct a garage.

**Philadelphia, Penn.;** Bankers' and Merchants Garage Co.; $155,000; F. R. Hansell, S. C. Seymour, J. V. Pimm.

**Clarksville, Tenn.;** Royal Garage and Machine Co.; $10,000; to conduct a garage; J. H. Smith.

**Fairmont, W. Va.;** People's Garage Co.; $10,000; to conduct a garage.

**Milwaukee, Wis.;** The Mulkern Garage Co.; $150,000; Frank Mulkern, Helen G. Mulkern, F. X. Boden.

**Dunkirk, Ind.;** Deal Auto Co.; $3000; H. L. Norris, J. O. Spahr.

**Indianapolis, Ind.;** Hamilton-Harley Co.; $10,000; Fred Hamilton, John Trubger, Samuel Enterline.

**Jersey City, N. J.;** Morris Process of New Jersey, Inc.; $150,000; to manufacture and deal in motors, engines; C. H. Jarvis, P. L. Nieser, J. L. Turner.

**Albany, N. Y.;** The Orange Motor Co., Inc.; $500; Charles N. Touhey, Winfred I. Touhey, Edward C. Touhey.

**Brooklyn, N. Y.;** The Mulford-Haas Co., Inc.; to manufacture motors, engines and cars; Charles A. Woods, Harry Van Alst.

**Brooklyn, N. Y.;** Gilbert B. Perkins, Inc.; $50,000; G. B. Perkins, A. G. Perretz, H. Caulton.

**Buffalo, N. Y.;** Tri-Continental Corp.; $25,000; to manufacture motors and engines; E. C. Sehlenker, V. E. O'Grady, A. H. Conners.

**Highland, N. Y.;** Acme Storage Battery Corp.; $100,000; to deal in storage batteries for automobiles; J. Phillips, F. F. Simpson, G. Kaehler.

**New York, N. Y.;** Charlotte A. Bridgewood Mfg. Co., Inc.; $50,000; to manufacture cleaner for auto windshields; Charlotte A. Bridgewood, Florence Lawrence, E. M. Eichner.

**New York, N. Y.;** The Greater Motor and Engine Co., Inc.; Louis Strebel, William J. Gerhardt, A. M. Westerberg.

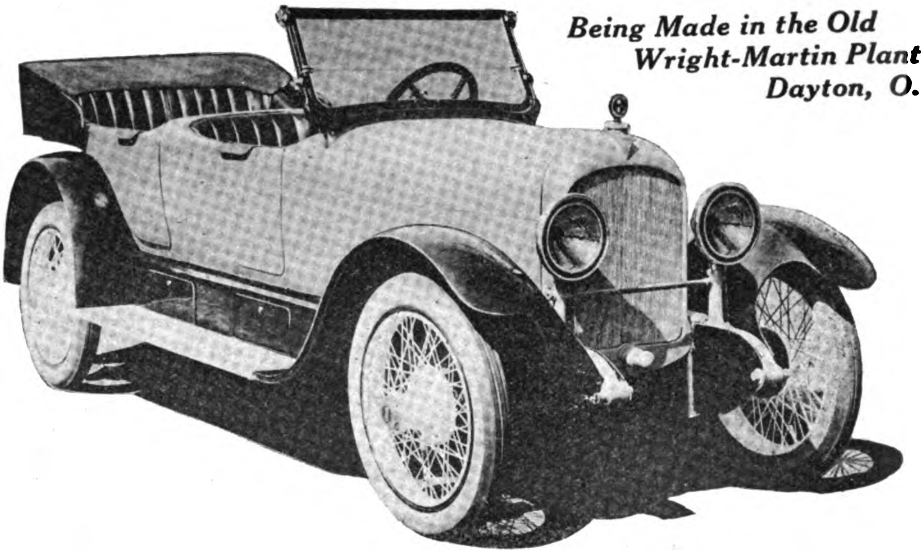
**New York, N. Y.;** Lloyds Fire Truck Corp.; $100,000; to manufacture motors, engines, cars; C. P. Scheid, H. Smith, A F. Hanrahan.

**New York, N. Y.;** Upton Carburetor Co., Inc.; $100,000; to manufacture carburetors and automobile devices; M. M. Friedman, R. M. Upton, H. W. Newman.

**Wilkinsburg, Penn.;** The Motor Specialties Co.; $2000; to buy, sell and deal in and with motor and all parts; G. A. Thompson.

## *Model of the Darling Car*

### *Being Made in the Old Wright-Martin Plant Dayton, O.*



**Different Body Types Will Be Fitted to the Same Chassis, Which Has 130-Inch Wheelbase.**

**Motor, 7-N Continental Six.**
**Bore and stroke, 3½x5¼.**
**Carburetor, Stromberg.**
**Clutch, Borg & Beck disc.**
**Ignition, Atwater Kent.**
**Starting and lighting, Bijur.**
**Feed, Stewart vacuum.**
**Lenses, Conaphore.**
**Axles, Timken.**
**Motometer, Boyce.**
**Wheels, demountable wire.**
**Drive, left.**

## Newly Organized Manufacturers of Cars

**Dover, Del.;** Lombard Tractor Companies, Inc.; $8,000,000; to manufacture tractors, motors, wagons; A. W. Britton, S. B. Howard, H. B. Davis.

**Wilmington, Del.;** Daylight Equipment Co.; $500,000; to manufacture automobile headlights and automobile accessories.

**Wilmington, Del.;** Stanley Motor Carriage Co.; $13,100,000; to manufacture automobile trucks.

**Chicago, Ill.;** Hutton Accessory Co.; $50,000; to manufacture and deal in automobiles, motorcycles, parts and accessories.

**Indianapolis, Ind.;** Moore Corp. of America; $5,000,000; to manufacture automobiles; W. G. Moore, B. G. Hewitt, Frank D. Hill, W. J. Stoutenberg, O. Hilm.

**Ottumwa, Ia.;** Iowa Motor Co.; $15,000; to manufacture light auto trucks; George B. Simmons, J. A. Canning, O. L. Canning.

**Hebron, Mass.;** Amston Motor Car Corp.; $3,000,000; Conrad D. Trubenbach, James T. Connor, L. R. Watkyns.

**Omaha, Neb.;** Foshier Brothers & Dutton; $10,000; to manufacture and buy and sell automobiles, trucks, tractors and accessories; W. E. Foshier, E. E. Foshier, C. J. Dutton.

**New York, N. Y.;** J. B. Crockett Co.; $650,000; to manufacture automobiles, motors and machinery; I. W. Henry, J. H. Stuart, H. P. Counsen.

**New York, N. Y.;** Liberty Auto Flag Clasp, Inc.; $1000; to manufacture automobile accessories; Arthur J. Marks, Harry T. Gurney, Malcolm G. Collins.

**New York, N. Y.;** Utility Tractor Co., Inc.; $1,000,000; to manufacture tractors and farm implements; J. F. Burke, J. F. Burke, Jr., J. L. Goodwin.

**Cleveland, O.;** The Oberlin Motor Truck Co.; $1,250,000; William M. Oberlin, Jason C. James, Henry S. Ballard, Edna Alexander, J. J. McKnight.

**Norfolk, Va.;** Guardian Motors Co., Inc.; $9,000,000; C. F. Gasley, B. C. Brownell.

**Spokane, Wash.;** The Fox Motor Tractor Co.; $1,000,000; Peter C. Fox, Frank C. Fox, H. H. Delong.

**Wellsburg, W. Va.;** A. G. Neville Co.; $200,000; to manufacture automobiles and parts for same; A. G. Neville.

## Accessories, Equipment and Supplies

**South Bend, Ind.;** Yellow Taxicab and Transfer Co.; $5000; J. R. Nobile, J. A. Greif, F. S. Smith.

**Boston, Mass.;** W. E. Lalime Co.; $25,000; William E. Lalime, Ralph E. Joslin.

**Holyoke, Mass.;** K. R. Charlton, Inc.; $25,000; Kenneth R. Charlton, Patrick J. Garvey.

**Newark, N. J.;** Overland Tire Co.; $100,000; to manufacture tires; James A. Whitman, John D. Olwell, Robert L. Noah.

**New York, N. Y.;** Atlas Auto Accessories, Inc.; $50,000; F. X. Carmody, G. A. McLaughlin, J. T. Condon.

**Buffalo, N. Y.;** Barbour & Kittle Sales Corp.; $10,000; G. E. Kittle, F. W. Barbour, W. O. Shields.

**New York, N. Y.;** Couchois Tire Corp.; $50,000; to manufacture rubber and other tires for autos and vehicles; G. J. Couchois, R. Tiktin, J. Klingenstein.

**Rochester, N. Y.;** Giant Tire and Sales Co., Inc.; $10,000; to manufacture tires and automobile accessories; Joseph M. Johnson, Leonora Z. Johnson, Arthur L. Dunton.

**Cincinnati, O.;** The Charles H. Buettner Co., 422 W. Court St.; $20,000; to deal in auto accessories; C. H. Buettner.

**Chattanooga, Tenn.;** Highland Park Auto Co.; $5000; to furnish supplies and repair automobiles; T. E. Purcell, Lonnie Purcell, Clarence King, Will Southland.

**Dallas, Tex.;** Texas Tire Co.; $25,000; Sam Helfley, H. W. Helfley, E. M. Hampton.

**San Antonio, Tex.;** The Miller Co.; $20,000; for the purpose of conducting a wholesale and retail auto and accessory business, Alfred Muller, L. S. Peter, T. D. Cubbs.

**Richmond, Va.;** The Kelly Auto Supply Co.; $50,000; John S. Kelly, B. Dennis, Jr.

**Wheeling, W. Va.;** The Wheeling Oakland Co.; $5000; to deal in automobile accessories.

# How Much the Landlord of a Rented Store Building Can Interfere With the Tenant

By ELTON J. BUCKLEY.

**ARE you in need of legal advice? Do you want first class professional service at no cost to yourself? If so, address a letter to Mr. Buckley, in care of the Legal Department of the Accessory and Garage Journal, detailing your troubles as clearly as possible. He will give immediate answer, either on this page, for the benefit of other subscribers who may have the same trouble, or direct by mail, as the inquirer specifies. The writer should sign his full name and address, but only initials or a pseudonym will be published in these columns. The service is free to subscribers to this magazine.**

Every one of the readers hereof who rents his store building will be interested in the following:—

Paris, Ky.

Elton J. Buckley, Esq.

Dear Sir:—I have been occupying rooms in the third story of a bank building for the past four years, and I am in trouble, to wit:—

On Christmas, 1915, I lost a whole lot of business by not having enough space, and I told one of the members of the bank that I would be compelled to move out unless they gave me more work room, a reception room, etc. They told me to stay and that by fall of 1916 they would have me in good shape. In July the stockholders, directors, etc., decided to remodel the building out and out. Again I went to the directors and told them that I would be compelled to move out, at least during the remodeling. They insisted on my staying and said that they would not interfere with business, that the stairway would be in working order and that the elevator would only be out of commission two or three days. But when the cold wave set in the workmen harassed me by nailing the doors until I told them that I would blow out the first one's brains that I caught nailing the doors again. Again, in the early part of December, at my best time, the elevator was taken down and was out of commission for about six weeks. The difference in my business for six weeks preceding Christmas for 1916 as compared to the 1915 was about $450 to $500. Now they are remodeling my room and I have been idle for several weeks, and the work could have been done in less than a week. What can I do about it?

I am holding $200 back rent pending the outcome of this business—but of course they expect me to pay it—this I have every reason to believe.

Yours,

* * * *

Undoubtedly a tenant interfered with in such a manner as this has a remedy, unless his lease contains, as a part of that foot or so of fine type for which leases are famous, something which gives the landlord the right to do what he has done. I doubt if the lease does contain such matter; even leases don't usually go that far.

Let me discuss for a minute just how far a landlord can interfere with his tenant's rights before the latter can do something. Assuming that the lease contains no warrant to the landlord, he can interfere in two ways, both of which are unlawful:—

First.—He can make it so uncomfortable for the tenant as to warrant the latter in throwing up his lease and leaving. That is called constructive eviction, which can be defined as follows:

> Any unlawful act of the landlord, either of commission or omission, which results in a substantial interference with the tenant's right of possession or enjoyment, in whole or in part, may amount to an eviction. An act of the lessor amounting to a mere trespass and not interfering with the substantial enjoyment of the premises by the lessee, is not equivalent to an eviction.

In other words, a landlord, in order to evict his tenant, break the lease and relieve the tenant from the payment of any more rent, doesn't have to physically throw him out. If he makes himself so disagreeable that the tenant's use of the premises is seriously interfered with, the law says it is equivalent to eviction and the tenant can go.

There are a great many cases on this point in the books.

In one, a landlord agreed to make certain repairs. The tenant went in on the strength of this promise. The landlord failed to make the repairs, the building consequently became untenantable, and the tenant considered himself evicted and left. The court upheld him.

In another case, the landlord of a store building dug under it, as a part of certain operations, and the tenant's business was so interfered with by the nuisance and danger of the situation that he threw up the lease and moved. The court said he was right.

The landlord in a third case rented the first floor of his building to a storekeeper and himself ran a store on the second floor. Drippings from his stock of salt, tar and other things leaked through on the stock of the first floor, and after protesting without result, the first floor tenant moved out. The court decided in his favor also.

There are also cases as to what a tenant's remedy is when his landlord upsets him by rebuilding the rented building. It has been held that when rebuilding is for the tenant's benefit, and the landlord does not intend to deprive him of the use of the building, it does not amount to eviction. Nor is it eviction when the rebuilding is long delayed, nor when the result of it is to make the premises somewhat smaller. It is eviction, however, where the repairs are not shown to be necessary or desired by the tenant, and where the result of them is to materially diminish the value of the premises to the tenant. And certainly it is eviction where the tenant is actually prevented from carrying on his business.

Where the landlord's interference amounts to eviction, and the tenant goes, he can recover all the damages he has suffered, including his lost profits, if he has lost any. And, of course, he is released from the lease.

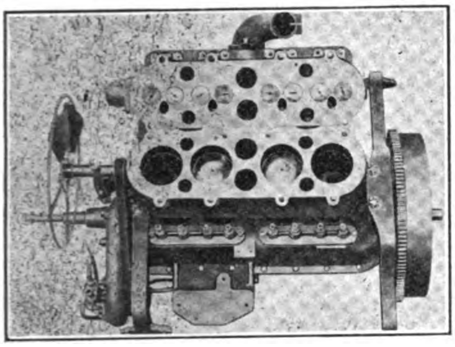
Second.—A landlord may interfere with his tenant in ways not important enough to amount to eviction. In that case it is trespass, and damages can be recovered for that, too, but the tenant is not relieved from the rent or the lease.

In the correspondent's case, his landlord was unquestionably guilty of one of these offenses. Which was it? I believe it was the first, because for a time he was almost prevented from conducting his business. I think he could have considered himself evicted, and moved. He did not, however, elect to treat it as eviction, and stayed on. He can still treat it as a trespass, however, and can collect all the damages from his landlord that he can show he sustained.

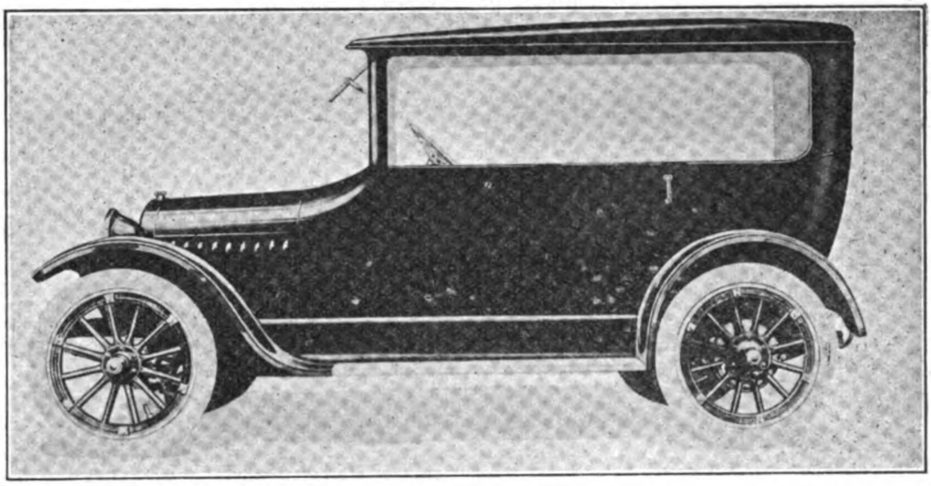
(Copyright, May, 1917, by Elton J. Buckley.)

# *Inter-State Is Showing A New Sedan*

**Manufactured by the Inter-State Motor Co., Muncie, Ind.; Described Technically in the Automobile Journal, May 10, 1917.**



**Inter-State Valve in Head Motor.**



**Inter-State Springfield Sedan Model, Showing Windows and Posts Removed for Summer Touring; Listed at $1325.**

**Motor, four-cylinder, en bloc.**
**Bore and stroke, 3½x5.**
**Horsepower (S. A. E.), 19 3/5.**
**Carburetor, model R Schebler.**
**Lubrication, circulating splash.**
**Clutch, cone, leather faced.**
**Cooling, thermo-syphon.**

**Ignition, Remy battery.**
**Rear axle, ¾ floating.**
**Tire sizes, 33x4.**
**Front springs, ½ elliptic.**
**Rear springs, ¾ elliptic.**
**Service brakes, external, contracting.**
**Wheelbase, 110 inches.**

# NEW BUSINESS CONCERNS AND CHANGES OF NAMES.

## The Month's Record of Transfer of Ownerships and Opening of Garages, Agencies, Branches, Service Stations and Repairs Shops.

### Recent Transfers of Business Ownerships.

**Grand Junction, Col.;** Fred Reynolds has purchased the repair department of the Western Colorado Motor Sales Co.

**Wilmington, Del.;** The Delaware Motor Sales Co., Cadillac dealer, has taken over the new building at 11th and King streets.

**Cambridge, Ill.;** Nels Larson. automobile dealer, has purchased the Shirden building at Prospect and Centre streets.

**Fairfield, Ia.;** S. C. Snow has purchased Charles Israel's interest in the Cohagen & Israel garage. The firm will be known as Cohagen & Snow.

**Knierim, Ia.;** Elmer Richardson has disposed of his garage to Albert Ballstadt of Rockwell City.

**Ogden, Ia.;** The Blosser Garage has been taken over by H. J. Hagge and C. Claussen. The garage will be operated by the Hagge & Claussen Auto Co.

**Red Lodge, Ia.;** Frank McCleary has leased the Pollard garage. He will have the Ford and Overland agency.

**Woodward, Ia.;** Charles R. Beadman has purchased an interest in the East Side Garage in partnership with J. W. Newland.

**Albion, Neb.;** Stalker Brothers has purchased the Studebaker garage.

**Hebron, Neb.;** Judge B. L. Willmore has purchased an interest in the automobile business of W. D. Luttrell. They have formed the Willmore-Luttrell Oldsmobile Co.

**Clyde City, Mont.;** O. M. Vinge has purchased the interest of C. E. Chapel in the Clyde Park Garage.

**Scobey, Mont.;** Battleson & Co. have taken over the business of the Scobey Motor and Machine Co.

**Omaha, Neb.;** Harrington Brothers have sold their garage at 1355 Park avenue to Walter A. George.

**Fargo, N. D.;** Sam Holland has disposed of his machine shop and garage to Edward A. Patten and Clarence Stark.

**Hatton, N. D.;** Ostile & Son have purchased the interest of Isaac Hegge in the Hatton City Garage.

**Park River, N. D.;** Patten & Stark are successors to Sam Holland Garage and Machine Shop.

**Pawhuska, Okla.;** the Auto Supply Co., formerly owned by H. C. Boutin and Ben Frohock, has been taken over by Joe Ferguson.

**Philadelphia Penn.;** The Jawer Auto Supply Co., 604-606 North Broad street, has taken over the adjoining show rooms at 608-610 North Broad street. On account of increased sales this purchase was made necessary.

**Pittsburg, Penn.;** The Anderson Tire and Repair Co. has been purchased from L. Steup. It is 75 by 60 feet. A $20,000 commercial garage will be erected.

**Dell Rapids, S. D.;** A. W. and H. R. Mohrman have sold their interests in the Dell Rapids Auto and Supply Co. to N. S. Peterson.

**Martin, Tenn.;** Moss & Lavender have purchased the business and garage of Bushart & Wheeler.

**Colorado, Tex.;** The Paramount Garage has been taken over by J. L. Pidgeon and E. Stanley.

**Olympia, Wash.;** J. B. Eshom has disposed of his interest in the Olympia Garage to George B. Branch and Carl Phaller.

**Fond Du Lac, Wis.;** the E. W. Clark Motor Co., handling Hupmobile. Chandler, White, Jackson, Dort and Maxwell cars, has a new addition to its line, that of the Happy Farmer tractor.

**Marion, Wis.;** the Marion Implement Co.'s garage business has been taken over by Grover Kamradt, who will conduct the business.

**St. Cloud, Wis.;** Peter Braun has purchased an interest in Peter Entringer's business. The firm will conduct the garage and will also be known as the Entringer-Braun Motor Co. The firm will conduct the garage and will also handle agency for Chalmers and Inter-State cars.

**St. Croix Falls, Wis.;** William Glennon has purchased the Kibler blacksmith shop and garage.

**Terrill, Wis.;** Hollis Decker and Charles Byse have formed a partnership to engage in the garage business.

### New Business Locations and Removals.

**Baker, Cal.;** the Baker Overland Co., agent for Overland cars, has removed to new quarters in the Armory building.

**Denver, Col.;** the Denver Rubber Tire Works Co., agent for Firestone tires, has removed to more commodious quarters at 1554 Broadway.

**Wilmington, Del.;** the Sweeten-Wilmington Co., distributor for Franklin and Hupmobile cars, have removed to new quarters at 1011 Orange street. The firm was formerly located at the Tourist Garage and Delaware avenue.

**Dublin, Ga.;** Corker-Page Auto Accessory, Page building, Jackson street, will move into a new building now being remodeled.

**Albion, Ill.;** Smith & Mitchell, dealers in Reo and Chevrolet cars, has removed from the Masonic building to the room adjoining the Majestic theatre.

**Chicago, Ill.;** The Dearborn Truck Co.'s city salesrooms have removed to larger quarters at 2017 South Michigan avenue.

**La Porte, Ind.;** the Indiana Auto Supply Co. will move to a new location.

**Emporia, Kan.;** the Emporia Battery Station, located at 113 West Sixth street, has been appointed to give service on Willard storage batteries.

**Centreville, Md.;** G. D. Neavitt, Woodford building, will move to a new location.

**Boston, Mass.;** the Boice-Perrine Co. has removed its mechanical department to a large building on Beacon street.

Plans are being made for the building of a new home.

**Boston, Mass.;** the H. S. Waite Co. has removed to a new salesroom on Beacon street. The Grant agency is handled.

**Flint, Mich.;** the Chandler Auto Sales Co. is now in its new home at 1105 North Saginaw street. The service station is very complete and one of the finest in the section.

**Mulliken, Mich.;** L. E. Sprague has remodeled the Union Garage on Main street.

**New York, N. Y.;** the Hayes Diefenderfer Co. has been compelled by the increasing business to seek larger quarters. The quarters are at 1872 Broadway, where it will have 30,000 square feet of floor space.

**Toledo, O.;** the George E. Wirt Co., agent for Briscoe and Marion cars, has removed to larger quarters on Madison avenue and 21st street.

**Spokane, Wash.;** Kitley & Scott will remove to a larger garage at Second and Washington streets.

## Agencies, Dealers and Service Stations.

**Harrison, Ark.;** the Gathright Motor Co. has established to do business. The company will occupy the new fireproof building recently erected by George W. O'Neal.

**Yuma, Ariz.;** the Electric Shop at 343 Second street has been equipped to give service for Willard storage batteries.

**Alameda, Cal.;** the Auto Battery Service Co., at 1411 Sherman street, has installed the Willard battery service equipment in its shop.

**Oakland, Cal.;** Borkman & Wagner have taken the agency for Ever Ready Flashlights. They will operate a service station at 2509 Broadway.

**Pasadena, Cal.;** The Pioneer Motor Co. has established a Prest-O-Lite service station at 2509 Broadway.

**Watsonville, Cal.;** the Watsonville Battery Co. of 556 Main street, has been equipped to give service on Willard storage batteries.

**Galesburg, Ill.;** the Malone Motor Car Co. has established an agency at 58 Boones avenue for Chevrolet cars. A full line of supplies and accessories will be carried. J. L. Malone is at the head of the company.

**Mt. Vernon, Ill.;** the Mt. Vernon Machine and Motor Co., has opened a Prest-O-Lite service station at 816 East Main street. The firm will handle Overland cars.

**Bouton, Ia.;** the Thornburg Auto Co. has established and will handle accessories, oil and greases.

**Vinton, Ia.;** the Hilmer-Shull Automobile Co. will open a salesroom. The new branch will carry Parrett tractors.

**Waterloo, Ia.;** Cedar Valley Motor Sales Co. has opened for business at 413 Fifth street, West. The firm has the agency for Briscoe and Elgin cars and will handle the Denby trucks.

**Lexington, Ky.;** the Phoenix Garage, at 250 East Main street, has installed Prest-O-Lite service equipment in its garage.

**Boston, Mass.;** the Malco Rubber Co. has formed to handle Malco tires and tubes.

**Newburyport, Mass.;** Walton & Stevens have established an automobile supply station at 8 Market square.

**Detroit, Mich.;** Frank E. Addison has secured the agency for the Maxfer truck and has established headquarters at 2372 East Jefferson avenue.

**Detroit, Mich.;** George S. Howe has entered into business at 935 Woodward avenue. He will handle also Howe tires and hood covers.

**Detroit, Mich.;** Stuber Stone & Co., Inc., Abbott distributors, have opened a large salesroom and service station.

**Dooley, Mont.;** Wright & Munson have opened for business.

**St. Louis, Mo.;** the Vigar Motor Car Co., Ford agent, located at 1617 South Jefferson avenue, has changed its name to the Riefling-Vigar Automobile Co. Plans are being made for the erection of a new building at the northwest corner of Jefferson avenue and Victor street.

**New Brunswick, N. J.;** B. & M. Storage Battery Co., 41 Easton avenue, has been appointed to give service on Willard storage batteries.

**West Hoboken, N. J.;** the Arrow Garage, 4324 Hudson boulevard, has been equipped with Prest-O-Lite service for batteries.

**Brooklyn, N. Y.;** the Z. & W. Motor Co., Inc., has opened at 1019 Bedford avenue and a modernly equipped service station at 220 Clifton place. The new company has the exclusive agency for Vim delivery cars, Burford and Koehler trucks.

**New York, N. Y.;** the Economy Motor Truck Co., distributor for U. S. motor trucks, has combined its sales and service business and will have both departments in one building. The new location will be at 306-08 West 64th street.

**New York, N. Y.;** the Saxon Motor Co. has opened a new service station at 237 West 55th street.

**Columbus, O.;** the Doremus Tire and Supply store has opened at 189 East Long street for business. Federal and Falls tires will be handled.

**Dayton, O.;** the Huber Fireproof Garage at 211 North Main street has opened a Prest-O-Lite service station and will give service on storage batteries.

**Hillsboro, O.;** Stanley & Leslie of 133 South High street have opened a Willard battery station.

**Dallas, Ore.;** Jack Hart of Third and Federal streets, has been appointed to operate a Willard service station.

**Kittanning, Penn.;** the Daugherty Motor Car Co. of 128 North McKean street has opened a Willard battery service station.

**Pittsburg, Penn.;** the Point Motor Sales Co., Ford distributor, has opened a branch salesroom in the Chamber of Commerce building. The new salesroom will be in charge of Herman Klingler.

**Punxsutawney, Penn.;** Whiteman & Co., Y. M. C. A. building, has become a Willard battery service station.

**Austin, Tex.;** the Southeastern Auto Supply Co. has opened at 105 West Fifth street. The firm will carry tires and accessories and has the agency for Amelie motor oil.

**Brady, Tex.;** the Brady Storage Battery Co. has been equipped with the Willard battery service system.

**Clarendon, Tex.;** the Clarendon Motor Co., Ford distributor, has taken possession of a new brick garage.

**Mineral Wells, Tex.;** Croft & Son have been appointed King dealers.

**North Yakima, Wash.;** the Central Auto and Supply Co. has opened a Prest-O-Lite service station.

**Seattle, Wash.;** Roy Corbett and Glenn Walker have secured the distributing agency for Miller's carburetors and have opened a service station in automobile row.

**Seattle, Wash.;** the Hendricks Sales Co. has opened a show room at 1123 Pike street. F. U. Bliss is manager.

**Marshfield, Wis.;** F. C. Ritt and Arthur Gerdes have secured the local agency for Buick, Oakland and Hudson Super-Six cars. They have opened an office and show room in the McMillan building, formerly occupied by the Hub City Garage.

**Shawano, Wis.;** Acord & Dunn will establish a Prest-O-Lite service station.

**Laramie, Wyo.;** Frank E. Fisher, located at 553 Fifth street, has opened a Willard battery service station.

## Garages and Repair Shops Newly Chartered.

**Baker, Cal.;** W. A. Clark has opened a new tire shop at the corner of Fourth and Centre streets.

**Kewanee, Ill.;** C. B. Greenstreet has opened a repair shop on West Second street and will be equipped to do all kinds of automobile and machine repairing.

**Lafayette, Ind.;** D. H. Decker will operate a Willard battery service station.

**Cape Girardeau, Mich.;** the Park Auto Co. has opened a new garage on lower Broadway in the Martin building. The firm will engage in buying old cars either to repair them for sale or will use the parts in building new cars.

**Jackson, Mich.;** the L-C Auto Co. is now established and ready for business in its garage at 218 West Pearl street. The garage has been fully and completely equipped for quick service day and night. The company will have on display its line of cars, which includes Peerless, Jackson and Federal trucks.

**Lowell, Mich.;** John R. Kiser has opened one of the finest garages. He will also carry Willys-Knight cars. He has also secured the agency for Overland cars.

**Babylon, N. Y.;** Fred G. Bohne is completing plans for the erection of a model garage building at the corner of Hoffman avenue, North and West Broadway.

**Hettinger, N. D.;** L. M. Howell will open a general garage and automobile business.

**Uehling, Neb.;** Barton Strand has opened a large garage.

**Franklin, O.;** the Auto shop has opened and all kinds of repair work will be done.

**Parker, S. D.;** L. N. Redfield will establish a garage business.

# NEW BUILDING OPERATIONS

## Contracts Made and Plans Contemplated for Garages, Repair Shops and Service Stations.

In this department is presented a record from the various states of the plans and specifications in course of preparation by individuals and concerns, of the contracts awarded for the erection of new garages and the like, of additions, improvements and alterations either already made or under consideration, and of the business removals and new locations that have taken place within the past month.

### Plans and Specifications Being Prepared

**Bridgeport, Conn.;** Samuel Friedman; one-story public garage, 40x71.

**Bridgeport, Conn.;** Connecticut Auto Mfg. Co.; four-story automobile salesroom, 70x128; $90,000.

**Hartford, Conn.;** W. E. Anderson, 21 Main street; two-story garage, 40x60; $5000.

**New Britain, Conn.;** New Britain Ice Corporation; two-story garage, 40x60; $4000.

**Stamford, Conn.;** W. J. O'Brien; one-story garage; $6000.

**Torrington, Conn.;** T. R. Walker, 139 S. Main street; one-story garage and storeroom.

**Waterbury, Conn.;** Daniel J. Mahoney, 1309 Bank street; one-story garage, 60x70; $4000.

**Waterbury, Conn.;** Edward Rylance, 35 Orange street; one-story garage, 40x42; $30,000.

**Waterbury, Conn.;** Pauline Rosengartin, 335 Willow street; one-story garage, 18x34.

**Wilmington, Del.;** Roscoe C. Tindall, 914

**Orange street**; one-story garage and **salesroom**, 100x150; $30,000.

**Washington, D. C.;** Francis A. Blundon, 707 G street, N. W.; one-story garage, 35x75; $3000.

**Washington, D. C.;** Semmes Motor Co.; fireproof garage at Rhode Island avenue and Ninth street, N. W.; $100,000.

**Chicago, Ill.;** Max Haber Blue Motor Cabs Co.; one-story garage; $18,000.

**Chicago, Ill.;** E. McDonnell, 26 N. Mayfield street; one-story garage, 50x150; $8000.

**Chicago, Ill.;** Edward Hogan, 1700 N. Fairfield street; one-story private garage, 22x50.

**Chicago, Ill.;** John Flizikowski, 138 N. La Salle street; one-story public garage, 50x125; $12,000.

**Chicago, Ill.;** A. A. Tocha, 1227 N. Ashland avenue; one and two-story garage and storage station, 50x125; $15,000.

**Chicago, Ill.;** Martin Construction Co., 74 West Washington street; one-story public garage, 92x200; $20,000.

**Chicago, Ill.;** A. L. Salzman, 38 South Dearborn street; one-story garage, 40x100; $8500.

**Chicago, Ill.;** Mark Harris, 3600 W. Harrison street; one-story public garage, 75x125; $20,000.

**Chicago, Ill.;** Dr. O. L. Mitchell, 3500 S. Halsted street; one-story public garage, 100x162; $15,000.

**Evanston, Ill.;** Louis Sherland; one-story public garage, 70x180.

**La Salle, Ill.;** F. W. Matthiessen; one and two-story garage, 50x125; $25,000.

**Boswell, Ind.;** C. W. Nicol, 212 Murdock building, Lafayette, Ind.; one-story public garage, 60x120.

**Davenport, Ia.;** L. Allin and C. Keeler, 305 E. Third street; one-story public garage, 89x166; $20,000.

**Dubuque, Ia.;** Louis Texler, 1038 Bluff street; two-story public garage, 51x100; $8000.

**Emmetsburg, Ia.;** William Donavan; one-story garage, 48x122; $5000.

**Griswold, Ia.;** Grenell & Hully; two-story garage; $15,000.

**Sioux City, Ia.;** Pinslow estate, Davidson block; three-story garage and machine shop, 67x100; $30,000.

**Washington, Ia.;** J. H. Duffy; one-story garage, 62x132; $15,000.

**Iola, Kan.;** A. Marr; one-story garage, 40x120; $36,000.

**Pittsburg, Kan.;** C. and A. Auto Supply Company; one-story garage, 100x170; $16,000.

**Wichita, Kan.;** Don Schuller, 149 N. Lawrence street; nine-story garage and storage station, 60x140; $90,000.

**Central City, Ky.;** J. W. Blackburn & Sons; brick and concrete garage, 40x80; install complete garage equipment; $5000.

**Louisville, Ky.;** P. M. Andriot, 215 W. Green street; two-story public garage, 48x105; $20,000.

**Louisville, Ky.;** George M. Clark; two-story brick fireproof garage; $14,000.

**Louisville, Ky.;** Quick Tire Service Company; two-story brick and concrete service station at Third and Kentucky streets; $15,000.

**Paducah, Ky.;** Foreman Automobile Co.; three-story service station at Fourth and Jefferson streets; 173½x115½; $50,000.

**Baltimore, Md.;** Monumental Motor Car Co.; Mt. Royal and Maryland avenues; brick garage, 40x80.

**Baltimore, Md.;** D. C. Butcher, 15 E. Fayette street; one-story garage, 50x150; $4000.

**Boston, Mass.;** J. J. Johnston, 261 Brookline avenue; one-story public garage, 300x180; $160,000.

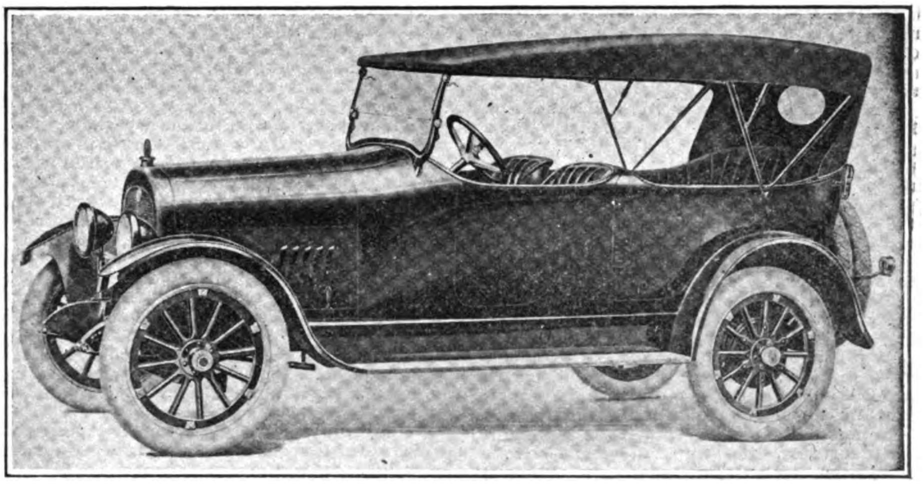
**Boston, Mass.;** Rotman & Abrams, 5 Garden street; one-story public garage, 135x80; $85,000.

**Brockton, Mass.;** Z. Kaplan, 63 Bay street; one-story public garage, 48x86; $5000.

**Everett, Mass.;** S. J. Lea, 36 Walcott street; one-story public garage, 162x47; $25,000.

**Leominster, Mass.;** Rollin B. Andrews, 39 Pleasant street; one-story garage, 40x50.

**Nantucket, Mass.;** John Terry, 8 Pearl street; one-story garage, 20x25.



**The Westcott Six, Series 17, with Five-Passenger Double Cowl, Manufactured by the Westcott Motor Car Co., Springfield, O.—Technical Description in the Automobile Journal, March 10, 1917, Now Priced at $1790.**

### FEATURES OF THE WESTCOTT SIX.

**Wheelbase, 125 inches.**

**Engine, 6 cylinder, 3½x5¼, en bloc, 29 2/5 h. p., S. A. E.**

**Delco, two-unit, starting, lighting and ignition system, with Willard storage battery.**

**Rayfield carburetor, fed by Stewart vacuum system.**

**Cooling, centrifugal pump with thermostatic control.**

**Clutch, dry plate multiple disc.**

**Transmission, Westcott, selective, sliding gear type, three speed.**

**Left hand drive, centre control.**

**Lubrication, forced feed and splash.**

**Rear axle, Timken with worm bevel gear and Timken bearings.**

**Springs, cantilever in rear, semi-elliptic in front.**

**Wheels, artillery with Firestone, quick demountable rims.**

**Tires, 34x4.**

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**Pittsfield, Mass.;** George E. Shipply; one-story public garage, 50x60; $5000.

**Southbridge, Mass.;** Joe Serlette, 3 Elm street; two-story public garage, 136x150; $10,000.

**Ann Arbor, Mich.;** G. A. Rhode; one-story public garage, 40x90; $5000.

**Detroit, Mich.;** Detroit Motor Sales Co., 275 Clippert avenue; two-story garage and show room, 122x112; $40,000.

**Grand Haven, Mich.;** William Larsen, 7 South Dearborn street; one-story garage, 50x13; $20,000.

**Hastings, Mich.;** Stebbins & Westpinter; one-story public garage, 134x84; $10,000.

**St. Paul, Minn.;** Alexander A. Fishback, 705 Stewart avenue; two-story public garage, 20x70; $9000.

**Kansas City, Mo.;** H. D. Jerowitz; one-story brick garage; $5000.

**Kansas City, Mo.;** Frank Barhydt, 1725 McGee street; one-story tile and brick auto accessory salesroom, 25x100; gravel roof; $4000.

**Webster Groves, Mo.;** Nolte & Naumann, Fullerton building, St. Louis, Mo.; two-story garage, 26x28; $3500.

**Blair, Neb.;** Larsen & Jacobson; one-story garage, 72x100; $12,000.

**Omaha, Neb.;** C. M. Skinner, Ralston, Neb.; one-story garage and salesroom, 75x120; $15,000.

**Newark, N. J.;** Lur Holding Co., 30 E. Kinney street; one-story public garage, 44x361; $18,000; Lessee, Clinton Hill, 401 Clinton avenue.

**Ridgefield, N. J.;** Frederick W. Menter; one-story garage; $4000.

**Brooklyn, N. Y.;** James Greenbaum, 530 Stone avenue; one-story public garage, 60x75; $6000.

**Brooklyn, N. Y.;** Tobias Goldstone, 50 Graham avenue; two-story garage, 25x71; $10,000.

**Brooklyn, N. Y.;** Charles D. Strang, corner S. Portland and Atlantic avenues; one-story public garage, 25x100; $7000.

**Brooklyn, N. Y.;** John Sklar, 133 Floyd street; one-story garage and repair shop, 120x125; $20,000.

**Elmira, N. Y.;** Charles W. Bishop, 261 State street; two-story garage and service station, 53x112.

**Ithaca, N. Y.;** William Murray, 901 W. State street; two-story public garage and salesroom; $4000.

**Larchmont Manor, N. Y.;** Gustave Kilthan, 6 Neptune place, New Rochelle, N. Y.; one-story public garage, 60x125.

**New Rochelle, N. Y.;** Max C. Burger, 475 Flushing avenue, Long Island City; one-story public garage, 50x100; $9000.

**New York, N. Y.;** Giannatasia John, 509 Willis street; four-story garage; $28,000.

**New York, N. Y.;** Brice estate, 50 W. 42nd street; two-story garage, 92x96; $35,000.

**New York, N. Y.;** De Candido Construction Co., 664 E. 189th street; one-story garage, 50x83; $10,000.

**New York, N. Y.;** Dochterman Realty Co., 457 E. 10th street; one-story garage, 100x126; $35,000.

**Niagara Falls, N. Y.;** Shredded Wheat Company, 452 Buffalo avenue; one-story public garage, 60x110.

**Schenectady, N. Y.;** J. Vrooman's Sons Co., 138 State street; one-story garage and storage station, 30x50 and 20x40.

**Statesville, N. C.;** Carolina Motor Co.; J. M. Deaton, president; one-story garage, 70x150.

**Zeeland, N. D.;** Jacob Berreth; one-story public garage, 35x80; $6000.

**Akron, O.;** J. J. Harter, 88 S. Howard street; two-story garage and salesroom, 25x110; $30,000.

**Cincinnati, O.;** John Striker, 911 Purcell avenue; one-story public garage and salesroom; 50x125; $10,000.

**Cincinnati, O.;** Eastern Capitalists, care F. A. Schmidt & Co., 136 East Fourth street; two-story garage and salesroom, 60x95; $20,000.

**Norwalk, O.;** Norwalk Garage and Supply Co.; one-story garage and salesroom, 66x176; $40,000.

**Norwood, O.;** H. Rottman; two-story garage and repair shop, 40x44; $3000.

**Allentown, Penn.;** D. F. Bast, 36 Union street; two-story garage, 50x60; $6000.

**Altoona, Penn.;** A. N. Cherry & Son, 2705 Broad avenue; one-story commercial garage; $40,000.

**Dormont, Penn.;** Delmont Garage Co., corner Wyant and Hampton streets; one-story commercial garage, 45x100.

**Hamburg, Penn.;** Hahn Motor Truck Co.; assembling department, 50x100.

**Peckville, Penn.;** Benjamin A. Crowther, Miller building, Scranton, Penn.; two-story garage, 35x60; $8000.

**Philadelphia, Penn.;** Isaac C. Sutton, northwest corner 16th and Sanson streets; one-story garage, 14x22; $2000.

**Pittsburg, Penn.;** H. B. Yardum; six-story garage, 60x60; $75,000.

**Providence, R. I.;** William J. Richards, 17 Exchange street; three-story public garage, 20x40; $8000.

**Huron, S. D.;** A. M. Urquhart; two-story public garage, 50x150.

**Huron, S. D.;** Wilson Barber Auto Co., 428 Wisconsin street; one-story public garage, 70x130.

**Mineral Wells, Tex.;** C. E. Turner; reinforced concrete garage; $30,000.

**Port Arthur, Tex.;** Linn Garage; two-story brick garage and salesroom at Proctor and Atlanta avenues; 100x140; wood and concrete floors; $20,000.

**Wichita Falls, Tex.;** Firestone Tire Organization; salesroom, office and service station; 10,000 square feet of floor space.

**Windsor, Vt.;** McKnight & Miller, 61 State street; one-story garage, 50x50.

**Manteo, Va.;** Capt. Joseph M. Black, U. S. N.; one-story garage, 24x25; $4000.

**Kelso, Wash.;** Peters Machine Co.; one-story garage, 75x100; $8000.

**Milwaukee, Wis.;** John Pynszeyushi, 202 Second avenue; one-story garage, 20x22; $2500.

**Milwaukee, Wis.;** Northwestern Motor Car Co., 1021 29th street; two-story garage, 130x190; $75,000.

**Milwaukee, Wis.;** Joseph Pretlitze, 389 Seventh street; one-story garage, 60x120; $18,000.

## New Contracts Recently Awarded.

**Tuscaloosa, Ala.;** A. Laycock; garage for J. C. Persons and S. F. Clabaugh; $12,000.

**Benton, Ark.;** J. W. Atkinson; garage, 50x150; for John L. Hughes & Son; $6000.

**Denver, Col.;** W. S. Andrews, 1245 Detroit street; one-story garage, 81x125; for C. C. Worrell; $12,000.

**Denver, Col.;** Alexander McIntyre, 1300 S. Pennsylvania street; one-story garage, 25x120; for Dr. J. N. Hall, Metropolitan building; $4000.

**Greenwich, Conn.;** Weir Building Co.; two-story garage, 30x30; for W. F. White; $5000.

**Hartford, Conn.;** A. Ulinsky Building Co., 360 Burritt street, New Britain, Conn.; one-story public garage, 90x60; for Julian Glowacki; $4000.

**Wilmington, Del.;** J. E. Healy & Sons, Inc., 709 Tatnall street; two-story garage, 29x41; for Dr. J. B. Stubbs, 827 Tatnall street; $2100.

**Washington, D. C.;** A. M. Poynton C 715 14th street; one-story garage, 26x36; for George F. Zeh, 3165 Mt. Pleasant street; $4000.

**Augusta, Ga.;** F. P. Branch; three-story garage, salesroom, accessory salesroom, accessory storeroom and auto storage station; for Morris-Lewis Garage and Supply Co.

**Chicago, Ill.;** Jacob Rodatz, 299 S. La Salle street; one-story garage, 25x145; for Goodman Mfg. Co., 4800 S. Halsted street; $3000.

**Chicago, Ill.;** E. W. Sproul Co., 1120 W. 35th street; one-story garage, 26.6x55; for Chicago Steel Foundry Co., 3720 S. Kedzie avenue; $4000.

**Chicago, Ill.;** Paul Mueller, 30 N. Dearborn street; one-story garage, 48x150 feet; for H. Wickersheim, 3259 Fullerton avenue; $10,000.

**Chicago, Ill.;** W. M. McDonald, 30 N. Dearborn street; one-story garage, 75x125; for J. V. Kinsman; $11,000.

**Lockport, Ill.;** Manning Brothers; one-story public garage, 48x120; $4500.

**Mattoon, Ill.;** J. S. Ozle & Son, 2620 Richmond avenue; one-story garage, 50x140; for C. W. Knight, 1816 Broadway; $5000.

**Monmouth, Ill.;** Monmouth-Galesburg Construction Co., Searles building; one-story public garage and repair shop, 40x145; for Edward Holmes, 122 S. A street; $10,000.

**Indianapolis, Ind.;** Ostrom Realty Co., 132 E. Market street; one-story public garage; for J. F. Jones, 2009 Ashland avenue; $2500.

**Sioux City, Ia.;** Coomers & Small, 312 United Bank building; one-story garage, 100x150; for Bekens Van and Storage Co.; $12,000.

**Shreveport, La.;** Garson Brothers; two-story brick garage and service station, 60x137; for Wilson Oil and Fuel Co.; $25,000.

**Baltimore, Md.;** Jesse C. Crockett, 1942 Walbrook avenue; one-story garage, 63x20; for E. and J. O'Brien, 108 E. Ostend street; $1800.

**Baltimore, Md.;** Willard E. Harn, 213 N. Calvert street; one-story garage, 55x20; for George H. Ault, 421 N. Howard street; $1500.

**Baltimore, Md.;** Consolidated Engineering Co.; 243 Calvert building; one-story garage, 12x60; for Henry B. Reinhardt; $1500.

**Hagerstown, Md.;** Clinton Trovinger, 57 Wayside avenue; one-story garage, 40x140; for William A. Damer, corner Antietam and Potomac streets; $8000.

**Boston, Mass.;** William Lundon, 27 School street; one-story public garage, 113x50; for D. A. Allen, 5 Rockland street; $15,000.

**Cambridge, Mass.;** J. J. Powers, 33 Myrtle avenue; one-story garage; 56x51; for Mrs. Mary A. Mullin, 65 Chestnut street; $5500.

**Chelsea, Mass.;** M. Gordon, 53 Essex street; two-story garage, 40x70x30; for Abraham Rosenbath, 73 Bloomingdale street; $8500.

**New Bedford, Mass.;** Griffith & Brennan, 713 Brock avenue; two-story garage and workshop, 30x40; for Hugh Beveridge, 100 Bonney street; $8000.

**Detroit, Mich.;** H. Scherer Co., 280 E. Jefferson avenue; one-story garage, 100x75; $12,000.

**Detroit, Mich.;** F. C. Goldner, 1552 West Grand boulevard; one-story public garage, 41x66; for Charles Hoffman; $2000.

**St. Paul, Minn.;** L. A. Parke, 817 Aldine street; one-story public garage, 80x123; for Snelling Auto Co., 708 N. Snelling avenue; $12,000.

**Carthage, Mo.;** F. J. Taylor, 1100 Olive street; one-story garage, 25x100 and 25x50; for W. Halliburton, 420 W. Chestnut street.

**Kansas City, Mo.;** C. L. Gray Construction Co.; four-story assembling plant, 800x1251; for Maxwell Motor Co., Detroit, Mich.; annual capacity 12,000 cars; $200,000.

**Kansas City, Mo.;** William M. Reid, 301 Postal building; one-story garage, 100x130; $15,000.

**Montgomery City, Mo.;** Harry Goger, 506 S. Morley street, Moberly, Mo.; one-story garage, 50x120; $6000.

**Omaha, Neb.;** C. E. Musgrove, 4507 N. 13th street; one-story garage, 44x112; $4200.

**Omaha, Neb.;** O. H. Strauser, 3202 Lincoln boulevard; two-story garage and salesroom, 132x132; for F. J. Fitzgerald, 340 Bee building; $30,000.

**Delawanna, N. J.;** David Henry Building Co., 6 Smith street, Paterson, N. J.; one-story garage, 34x44; for Antonie Chris Co., 20 Platt street, New York; $6000.

**Jersey City, N. J.;** James H. Verran, 138 Central avenue; one-story garage, 20x96; for Herman M. Stockfish, 130 Charles street; $3000.

**Trenton, N. J.;** James Morris Company, American Mechanics' building; one-story garage, 21x128 and 23x25; for Charles W. Beddiger, 235 E. State street; $2500.

**Buffalo, N. Y.;** H. R. Hanken, 66 Tillinghast place; one-story public garage, 40x60; $3000.

**Gouveneur, N. Y.;** Jesse S. Pollock, 105 Johnstown street; two-story garage and salesroom, 80x100; for Spooner, Campbell Co., 29 Clinton street; $30,000.

**New York, N. Y.;** Wells Construction Co., 237 Fifth avenue; five-story garage, 40x70; for Phillip Weeks Estate Corp., 2345 Broadway.

**New York, N. Y.;** Columbian Realty Co., 505 Fifth avenue; one-story garage, 100x200; $35,000. Lessee, United Electric Light and Power Co., 130 E. 15th street.

**Columbus, O.;** James Miller, 527 E. Fulton street; one-story garage, 16x20; for J. S. Ambrose; $1800.

**Oklahoma, Okla.;** Carhart Motor Co., 218 W. First street; two-story garage, 75x140; $90,000.

**Allentown, Penn.;** Butz & Clader; assembling building; 240x50; for International Motor Car Co.

**Allentown, Penn.;** H. G. Scheldon & Co., 915 Turner street; one-story garage, 60x108; for Horlacher Brewing Co., 311 Gordon street; $4000.

**Merion, Penn.;** E. J. Heddon, Finance building, Philadelphia; one-story garage, 23x50; for Seiburger & Rabenold, Pennsylvania building, Philadelphia; $5000.

**Philadelphia, Penn.;** Louis Cohn; brick garage, 20x60; at 3321 Filbert street; for A. Schreiber; $2525.

**Philadelphia, Penn.;** L. Davis; one-story brick garage, 20x54; north side of Olney avenue, east of Palethrop street; for Edward Clayton; $1250.

**Philadelphia, Penn.;** Hogg Construction Co.; two-story stone and brick garage, 44x169; east side Leland street, north of Poplar street; for Ridge Avenue Farmers' Market; $29,990.

**Philadelphia, Penn.;** F. Crompton & Brother; one-story brick garage, 43x42.6; at 2775-77 Helen street; for A. Krentz; $3500.

**Vandergrift, Penn.;** Frank Cheras Co.; one-story commercial garage, 68x105; $5000.

**Anderson, S. C.;** C. M. Guest; two-story garage, 70x118; for A. L. Todd; $25,000.

**Memphis, Tenn.;** J. H. Hollingsworth & Co.; two-story brick and concrete building, 150x100x100; for Osbwin Automobile Supply Co.; $27,000.

## Alterations, Improvements and Additions.

**Elbert, Col.;** George McKimmie's garage has been made larger by an addition 15 by 16 feet. He has established a filling station and put in a large stock of supplies.

**Connersville, Ind.;** Francis B. Ansted has leased the building at East Sixth street and is remodeling same for taxicabs and automobiles. He has the agency for the Lexington car.

**Roundup, Mont.;** The Brooks Garage will be made larger by the addition of a second story.

**Sidney, Mont.;** The Gem City Motor Co. is constructing an addition 40 by 50 feet to its garage.

**LaFollette, Tenn.;** J. R. Russell is remodeling the garage into a modern garage.

**Toppenish, Wash.;** The Yakima Auto and Supply Co. will remodel the one-story building on West First avenue.

## Factories, Garages and Repair Shops.

**Bridgeport, Conn.;** The Connecticut Auto Mfg. Co. will build a factory 70 by 12 feet and will be four stories.

**Washington, D. C.;** John Morris will build at 17th and U streets a two-story garage. It will be fireproof and will cost about $70,000.

**Dawson, Ga.;** I. Varnor will open a garage and carry auto supplies.

**Boise, Ida.;** Jack Skillern will build a stucco garage to cost $1000.

**Chicago, Ill.;** W. G. Gillett, Parkside building, will erect a one-story brick garage and storehouse at 4500 West Division street to cost $6000.

**Hammond, Ind.;** Behling-Beale Co. will open to deal in automobile supplies.

**Rockville, Ind.;** Edward H. Nicholas and Chan Smart, Virginia and High streets, will erect a two-story garage, 80 by 100 feet.

**Rochester, Ind.;** Leroy and J. T. Conover and James Enoch, North Main street, will erect a garage 40 by 120 feet.

**Stuart, Ia.;** J. A. Darrell will open a Ford repair shop and garage in the Tassell building.

**Rippey, Ia.;** M. F. Fry will open a garage. The building, which is being constructed, is situated between Farmer's telephone office and Dr. Shipley's office.

**Baltimore, Md.;** Semmes Motor Co. will erect a building at Rhode Island and Ninth street at the cost of $100,000 and will deal in automobiles.

**Grand Rapids, Mich.;** Martin Whalen is planning to erect a garage to be 51 by 51 feet and two stories high. It will be located at Oakes street, near Division avenue.

**East St. Louis, Mo.;** L. A. Gerber will open an automobile tire and accessory shop at 517 State street. He will also do vulcanizing and general tire repair work.

**St. Louis, Mo.;** The Moon Motor Co. has taken a lease on a building to be erected at 3115 Locust street.

**Miles City, Mont.;** L. W. Stacy will erect a garage to be 115 by 125 feet.

**Brooklyn, N. Y.;** O. Ehrenswels, 361 Thatford avenue, will erect a one-story brick garage, 50x100 feet. It will cost $10,000.

**Brooklyn, N. Y.;** F. E. Granmiller 426 79th street, will erect a one-story garage 40 by 40 feet on Ridge boulevard and it will cost $1700.

**Brooklyn, N. Y.;** A. Greenbaum will erect a one-story brick garage, 50 by 53 feet, on Stone and Blake avenue. It will cost $1500.

**Brooklyn, N. Y.;** Peter F. Reilly, 618 Dean street, will erect a two-story brick garage, 50x100 feet, at Bergen street and Vanderbilt avenue. It will cost $25,000.

**Brooklyn, N. Y.;** Adolph Werder, 637 Metropolitan avenue, will erect a garage. It will be 40 by 100 feet, at the corner of Berriman street and Liberty avenue. It will cost $7500.

**Niagara Falls, N. Y.;** James Mullane will erect a $20,000 fireproof garage on 10th street. The garage will be 45 by 180 feet, with wing 90x36 feet.

**St. George, N. Y.;** William Taylor has filed plans for a public garage to be built at the corner of Richmond terrace and Lafayette avenue at a cost of $15,000; the dimensions are to be 100x25.6.

**Grand Forks, N. D.;** The McKinney-Fuller Motor Co. will erect a $60,000 garage.

**Canton, O.;** J. S. Schlemmer and F. E. Graber, 12th street and Cherry avenue, will erect a two-story building.

**Conneaut, O.;** The Independent Motor Co. has purchased a large three-story building which it will occupy. The concern was formerly located in Port Huron.

**Conneaut, O.;** J. M. Hibler, Main street, will open a garage and will install equipment and 1000-gallon gasoline tank.

**Dayton, O.;** The Dayton Transfer Co. will erect a three-story fireproof garage at 66 Eaker street. It will cost $20,000.

**Paulding, O.;** Coons & Moore will occupy a new garage building.

**Quay, Okla.;** Cherry & Beall will open a garage.

**Blackwell, Okla.;** Butler-Slaughter Motor Co. will open a new brick garage on East Blackwell avenue. The garage will be modern and will have three entrances. The firm will handle the Overland, Oldsmobile and Marmon car.

**Waurika, Okla.;** Ford L. Marks will erect a vulcanizing plant.

**Corvallis, Ore.;** The Corvallis-Overland Co. is building a garage and service station.

**Philadelphia, Penn.;** The Raith Construction Co., Inc., 302 Master street, will erect a garage at 5701 Kingsessing avenue.

**Philadelphia, Penn.;** M. W. Young will erect a two-story brick garage, 13 by 21 feet, at 6442 Woodbine avenue, for Herman Wendell. It will cost $1200.

**Pittsburg, Penn.;** The Eddie Bald Motor Car Co. is erecting a new salesroom and service station on Baum boulevard. The structure will be three stories high.

**Dallas, Tex.;** Sidney Reinhardt is erecting a large garage and filling station. The cost is estimated at $11,400.

**Seymour, Tex.;** Cope & Craddock will soon construct a garage.

**Anderson, S. C.;** R. H. Nesbitt Auto Co. will open at Spartanburg, S. C., and will deal in automobiles.

**Sanish, S. D.;** N. C. Smith will construct a garage 366 by 366 feet in area.

**Wheeling, W. Va.;** The Hawthorne Automobile and Equipment Co., Lock Box 415, will open a service station and garage.

**Big Falls, Wis.;** Otto Faehling will open a garage.

**Delavan, Wis.;** W. L. Utley is planning to erect a modern garage on North Third street.

**Reedsville, Wis.;** Piepenburg & Reichert will erect a one-story garage. It will be of brick.

# *Tips For Maxwell Economy Run*

## Cup Contest of Dealers With Stock Cars In The United States and Canada Interesting Event

**THAT no change should be made in any of the regular factory equipment or adjustments in the stock Maxwell car is the paramount note in a list of instructions for 2000 or more Maxwell dealers who next month are to travel over roads everywhere in the United States and Canada in a national proof demonstration of Maxwell upkeep economy, participating in a contest for $5000 in cash prizes, with a silver and gold championship cup, to be awarded by the Maxwell Motor Sales Corporation. The event is to be known as the National Maxwell Gasoline Economy Proof Day.**

**The instructions were prepared by Ray F. McNamara, Maxwell road engineer and motor car pilot. In his advice McNamara, who has driven over 700,000 miles at the wheel, gives a series of helps that are educational in value for motorists generally and of such surprising nature, considering the experience** they are based on, that the Maxwell company plans to put his deductions into booklet form and distribute them to automobile owners everywhere.

"Do not change a thing in the stock cars as you borrow them from their owners for your run," McNamara points out in his instruction sheet. "See that you have a fair compression in each cylinder, use a speed of 15 miles an hour, don't tamper with anything the factory has put into the regular stock car and you will be certain of about 30 miles from your one gallon of fuel. With practise on your course and careful driving you can do anything from 30 to 45 miles per gallon.

"Do not make your run with high-test gasoline. The stock Maxwell motor is engineered to run best on ordinary gasoline bought at the street filling stations. High-test gas gives more power, but less mileage. Do not change the factory dash adjustments in the least. Contrary to theories, too lean a mixture cuts down from two to four miles on the gallon.

"By all means do not tamper with the regular Maxwell carburetor. Leave the float level and the needle taper exactly as the factory engineers have made them. Do not change the valve timing and do not attempt to change the valve setting. If the car has been run 3000 miles or more you need not grind the valves. Carbon deposit will not affect your mileage either way.

"Be assured that I have made gasoline economy demonstrations with Maxwells in every part of the United States, with my record to date being 45.6 miles on one gallon, and I have yet to discover a way in which I could improve upon what our engineers have given the regular stock car. I have tried to better them, but have lost mileage in every instance. Stick to the regular stuff and any owner's Maxwell will do the rest."

McNamara's instructions were sent to Detroit from Los Angeles. In the contest demonstration upward of 5000 Maxwells will participate, each mount being an owner's machine. Each of the dealers entering is required to run two owners' cars together over the same route, with three official observers in each car.

### AMERICAN ELECTRO-CHEMICAL SOCIETY MEETS.

At the meeting of the Electrochemical Society, recently held in Detroit, a number of electric furnace papers were presented by Messrs. J. A. Mathews, R. F. Flinterman, J. L. Dixon, C. A. Buck and C. H. Von Baur. Visits were made to several steel plants so as to afford the members and guests an opportunity to see the electric furnaces in actual operation. One of the afternoon sessions of the convention was devoted to the automobile storage battery, a product which has been the subject of extended research for a number of the foremost electro chemists in the country. The electrical battery is the only source of power for propelling the submerged submarine.

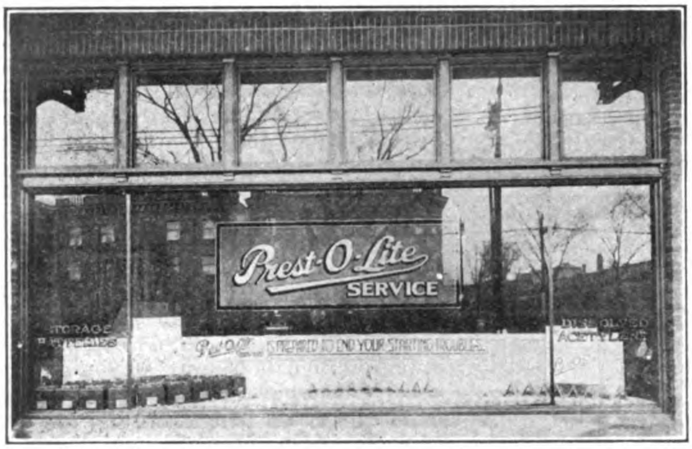
The following officers of the American Electrochemical Society were elected: President, Colin G. Fink; secretary, Joseph W. Richards; treasurer, J. P. Salom.

### N. A. A. A. J. MEETING HAS BEEN CALLED OFF.

The meeting of the National Association of Automobile Accessory Jobbers, which had been scheduled for June 4-6 at Hot Springs, Va., has been called off.

In the bulletin sent out by the association the following opinion is given regarding the business outlook:

"This country is not going to the dogs. The opinion of those in a position to know best is that business will go along in this country this year about the same as it did last year. War conditions here and there may cause a slight lull, but in the aggregate volume and profits will run along about as in 1916."



Armed Camp Window Display Constructed in Detroit Branch of Prest-O-Lite.

DRUGS
CIGARS
VICTROLENE
VICTROLENE CO.
VICTROLENE
VICTROLENE CO.

Brookline, Mass., Drug Store Shows Owners a Popular Car Polish in a Tasty Display.

# Battery Parts Make a Fort

## Prest-O-Lite Present Unique and Timely Military Display in Window of Its Detroit Branch

BECAUSE of its timeliness, one of the attractive window displays pictured herewith created unusual attention and comment. It was used in the window of the Detroit branch of the Prest-O-Lite Co., Inc. Aside from the show cards, which were done in red, white and blue, the display is made up entirely of Prest-O-Lite batteries, battery parts and accessories.

Gotten up in the form of a military camp, a number of "tents" were built of battery plates and the camp protected by an "entanglement" of cell connectors. Prest-O-Lite batteries were arranged in the form of a fort on which were mounted hydrometer "guns." The "guns" were manned by battery experts, who were supplied with plenty of ammunition in the form of distilled water, testing apparatus, etc. A card read, "Enlist now in our army of satisfied customers."

### DRUG STORE DISPLAY MADE BY VICTROLENE.

The Victrolene Company, 39 Pearl street, Boston, Mass., makers of Victrolene car polish, which gives a high luster to the finish on automobiles without leaving a greasy surface to collect dust and dirt, has attracted widespread attention to its product through the conspicuous exhibits given at auto shows and in retailers' windows. A display of Victrolene in the drug stores of J. L. McGowan, Brookline, Mass., recently brought many customers into the store, who immediately became purchasers upon learning of the quality of the product and its superiorities amongst car polishes.

### HIGH STEEL MARKET FORCES PRICE ADVANCE.

The New Era Spring and Specialty Company, Detroit, Mich., in announcing an increase of list prices of New Era accessories which went into effect on May 10th and which is effective from that date until Aug. 1st, explains that the high steel market has forced an advance in prices.

How conditions have worked for the higher prices is explained as follows:

We have finally been forced to raise our list prices about 25 per cent. on tire carriers or quit furnishing them. List prices for last year were based on a steel market of $2.10 for flat stock and last fall with a market of $3.85, and we raised our interchangeable type but 30c list and the running board cradle type none at all, owing to greater economies in manufacture and marketing, but before Jan. 1st we paid $4.50 per hundred and shortly after $5.25, March 1st $6.10, and we are now forced to pay $8 per hundred with prospect of $11 steel very shortly and you can easily realize that the raise in retail list prices, averaging about 25%, is absolutely imperative.

### WOMAN MAKES SUCCESS AS AN OIL SELLER.

Helen Moore of Seattle, Wash., enjoys the reputation of being the only successful oil saleswoman in the country. In fact, she has risen above the plain title of saleswoman, having been appointed manager of the Indian Refining Company's branch in Seattle. Since she took up the work the company's sales of Havoline products in her territory have been more than doubled.

Equipped with a thorough knowledge of lubrication problems she has made an exceptional success in securing and keeping her customers and uses her motor car in covering the territory.

Miss Helen Moore, Seattle, Wash., Saleswoman for Havoline Oil.

ACCESSORIES
AND
EQUIPMENT

### "OFF-AND-ON" TIRE TOOL.

A tool for removing and applying plain and demountable clincher tires to automobile rims, that will eliminate much of the arduous and unpleasant labor connected with either operation is a boon to motorists. The inventors of the "Off-and-On" tire tool seem to have come pretty close to solving the problem and have at least made tire changing a much more pleasant task through the use of this instrument than when considerable brawn and effort was required to accomplish the same end. The tool is in two pieces and of odd and unusual shape. It is so applied that the weight of the wheel when swung around supplies most of the effort necessary in removing the tire or replacing it.

**Manufactured by the New Era Spring and Specialty Co., 865A Woodward Ave., Detroit, Mich. Price $1 complete.**

### AUTOMATIC SIMPLIFIER.

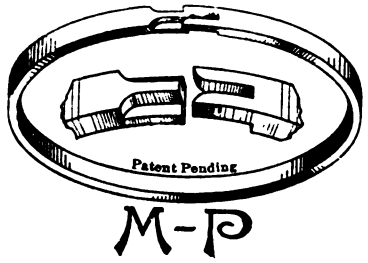
A new device for simplifying the driving of the Ford car is being placed upon the market. By its use full control of the car is through but one pedal. The action is entirely automatic and the engine cannot be "killed" by quick application of the service brake. As the brake pedal is pushed forward the high speed is automatically released and held in neutral position until released by a slight touch of the foot. The action of low and high speeds through the pedal is not changed, but immediately the brake is applied a neutral speed position is obtained. The emergency brake need not be used except as an additional precautionary measure. The reverse is obtained as usual, but with the attachment, it is unnecessary to hold the clutch pedal at neutral. The device is easily and quickly installed on any Ford car without drilling any holes.

**Manufactured by Marion Metal Products Co., Marion, Ind. Price, $5.**

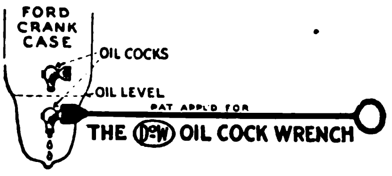
### LANE'S THREE-TON TRUCK JACK.

Lane's three-ton "H-C" truck jack is a direct leverage, handle control type, the mechanism being the simplest possible and with a minimum of parts to get out of order. The lifting lever is the only moving part that projects from the housing. Any of the wearing parts are readily accessible and can be renewed individually if ever necessary. The jack is 12 inches in height when closed and has a lift of six inches. The weight complete is 27 pounds. The jack is raised notch by notch with the usual pumping motion and lowered the same way when the handle is twitched backward.

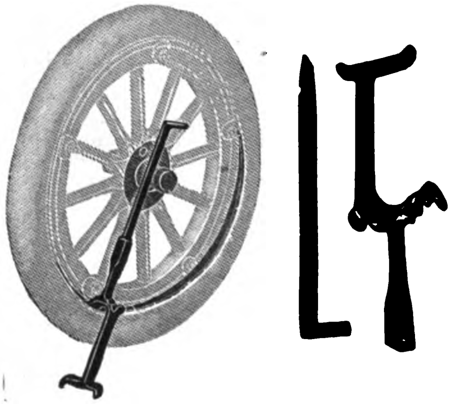
**Manufactured by Lane Brothers Co., Poughkeepsie, N. Y. Price of size No. 24, $10 each.**



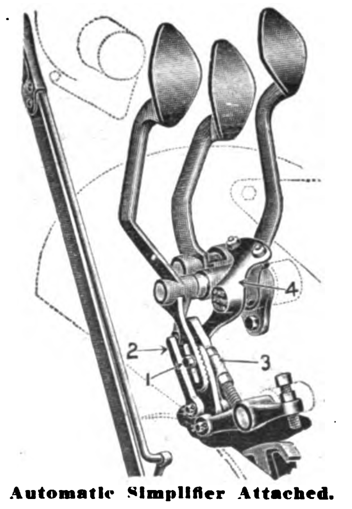
M-P Piston Ring.



Ford Oil Cock Wrench.



Off-and-On Tire Tool.



Automatic Simplifier Attached.

### OIL COCK WRENCH.

Every Ford car owner who has been obliged to reach beneath his car to find out the level of oil in the crank case by opening the petcock in the transmission case, thereby getting his clothes soiled by dirt or oil, will appreciate the utility of the tool illustrated. It is called the Dow crank case oil cock wrench. As the handle is 25 inches long, with this tool the oil cocks may be opened and closed without reaching by hand underneath the car. It is well made and finished in black enamel. This tool is also useful for opening or closing the cock on the bottom of the radiator.

**Manufactured by Dow Wire and Iron Works, Inc., Louisville, Ky. Price upon request.**

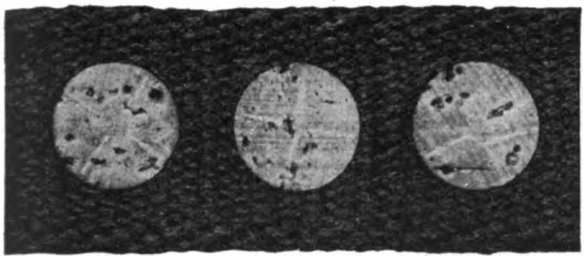
### M-P PISTON RINGS.

Of one-piece construction, the M-P piston rings are guaranteed by the manufacturers to produce perfect compression when installed in cylinders that are not warped or scarred. This ring is made of special close grain gray iron casting and machined to within .001 part of an inch of specified dimensions. The illustration shows the simplicity of design and one-piece construction.

**Manufactured by the Metal Products Co., 919-21 N. Market St., St. Louis, Mo. Prices for four inches in diameter and under $1. 4 1/16 inches to five inches in diameter, $1.25.**

### CORK TRANSMISSION LINING.

At the present time cork is being used extensively in automobile manufacture. Its resiliency, liquid repellant and frictional properties make it a very acceptable and useful product. The latest use is as an insert for transmission lining. This product is sold as a lining for the Ford car transmission bands. The base of the lining is formed of special import-



Cork Insert Transmission Lining.

ed fabric in which circular pieces of cork are inserted at intervals. The surface of the cork extends above the face of the lining to a very slight extent so that the initial engagement with the transmission drums is made on the cork, the load being taken up by the fabric lining as soon as continued pressure compresses the inserts to its level.

**Manufactured by the Advance Automobile Accessories Corp., 56 E. Randolph St., Chicago, Ill. Prices upon request.**

### SOOTLESS PLUG.

In the Feb. 25 issue of the Automobile Journal, as well as the March issue of the Accessory and Garage Journal, a description of the J. M. Soot-Proof Plug, together with an illustration, appeared. The maker's name was inadvertently given wrongfully as H. W. Johns Manville Co., New York City. The Sootless Plug is of unique construction, having a double explosion chamber, with the sparking points extended well into the mixture. The engine end of the plug is well protected, having a porcelain cap, so arranged and enclosed that it is protected against breakage by a metal housing. There are no asbestos packings used in the construction and it is said that compression and high pressure tends to tighten rather than loosen it. Being practically oil and soot proof, it is especially adapted for use in engines that use a large amount of lubricating oil.

**Manufactured by the Oakes & Dow Co., Boston, Mass. Prices upon application.**

### UNIVERSAL TEST CLIPS.

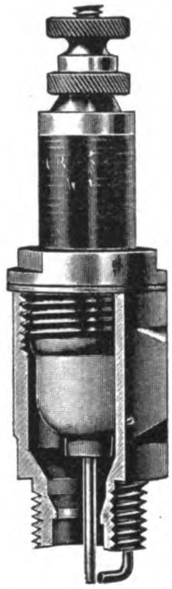
A great deal of time is often wasted with faulty battery and electrical connections. The Universal test clips are made with spring jaws fitted with sharp teeth, which bite through dirt and corrosion on terminals and make contact with the metal. The trouble caused by loose connections is eliminated with this form of contact.

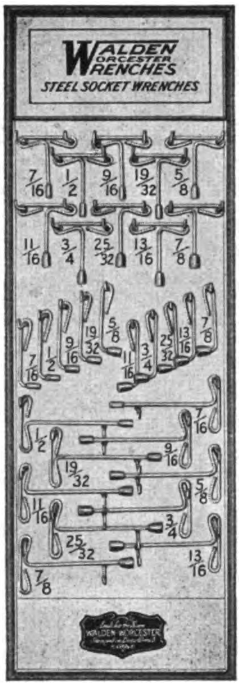
**Manufactured by R. S. Mueller & Co., 431 High Ave., S. E., Cleveland, O. Prices upon request.**

### TWO NEW WINDSHIELDS.

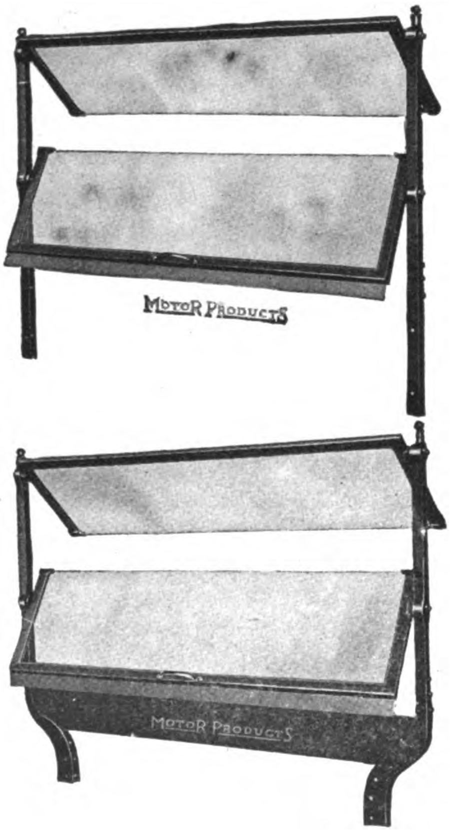
Two new windshields for Ford cars have just been announced by the manufacturers, to supply an insistent demand from body manufacturers and jobbers. The first of these shields is specially designed for use on Ford commercial cars. Its big feature is the elimination of stay rods, which usually form a part of Ford commercial shield equipment. The new shield, as may be seen from the illustration, bolts directly to a straight dash. Stay rods and clips are not needed, because the brackets hold the shield rigidly in place. Many new features of windshield design are embodied in this shield, which is rain vision and ventilating, thus insuring safety and comfort to the driver. The second is designed for Ford pleasure cars, and may be put on in place of the ordinary folding windshield supplied on Ford cars. It embodies the same features of the first shield and is a fitting complement to the line of special shields manufactured for earlier model Ford cars.

**Manufactured by the Motor Products Corp., Mack Ave., Detroit, Mich. Prices upon request.**

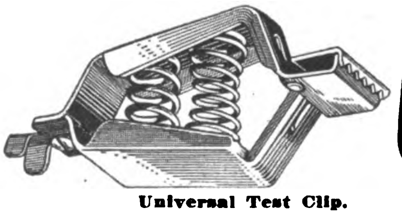




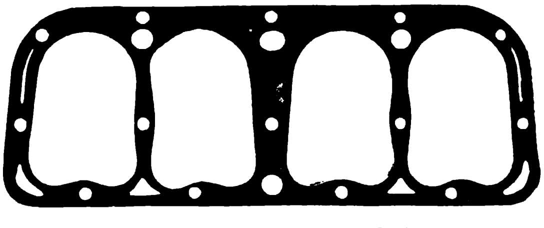
Above, Wrench Display Set; at Left, Sootless Plug.



Two New Windshields.



Universal Test Clip.



A Never-Leak Gasket.

### WRENCH DISPLAY SET.

The display and stock set of offset and tee handle wrenches illustrated, is designed to be used as a silent, ever-working salesman in the supply station. An essential point on all wire handle wrenches is the method of attaching the socket to the wire so that it cannot work loose or turn. The Walden Worcester wrenches are made by special method. The wire handles are milled and driven into the oval shaped broached hole in the socket, making it impossible for the handles to turn or work loose. All sockets are made of steel, from a solid bar, and broached accurately to size. They are shaped to allow a maximum of clearance in use, but with full allowance of stock for proper strength.

**Manufactured by Walden-Worcester, Inc., Worcester, Mass. Prices upon request. Special Ford sets.**

### NEVER-LEAK GASKETS.

To operate successfully, all joints between casting blocks of an engine must be gas and compression tight. The usual method adopted for accomplishing this is the placing of gaskets between the surfaces. The illustration shows two standard cylinder gaskets made of copper, with a layer of asbestos fabric between the surfaces. These gaskets are carefully made and reinforced at the vital points. They may be obtained for a great number of standard cars and are cut to fit, requiring no alteration. The same firm also manufacture gaskets for practically every part of the engine where packings are necessary.

**Manufactured by the Fitzgerald Manufacturing Co., Torrington, Conn. Write for catalogue and prices.**

## F-F BATTERY BOOSTER.

The F-F battery charging device is a magnetic rectifier for use on alternating current from any lamp socket of 60 cycles at voltages of 110, 220 or 20 per cent. higher or lower than normal and with a variation in frequency of 10 per cent., according to type of charger used.

A special transformer reduces the line voltage to the proper charging voltage without wasteful resistance. The change from alternating current to direct is accomplished through the use of copper and carbon electrodes actuated magnetically. By utilizing the negative, as well as the positive, alternations of the current, the full wave of alternating current is changed into a steady unidirectional current for charging batteries. A discharged storage battery can be recharged at a very high rate during the first several hours of charging, but should be reduced near the finish. This action is accomplished by the F-F battery booster, as, near the finish of a charge, when the voltage of the battery rises, the charging rate is automatically reduced to conform. The device is self-starting and when the alternating current is turned off or stops for any reason, the battery is cut out and cannot discharge through the rectifier. This action makes night charging practical. When desired two or more rectifiers can be connected in series or multiple on the secondary or load side to get various voltages and amperages.

**Manufactured by the France Manufacturing Co., Cleveland, O. Price, $15 complete.**

## SOCKET WRENCH SET.

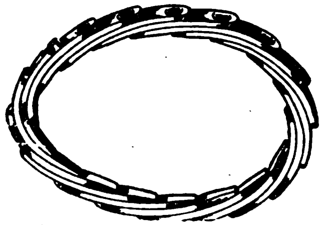
There is no tool used around the automobile more than the ordinary socket wrench. Hence it is a good investment, either for the owner or the repair man. The set illustrated consists of a No. 419 ratchet socket wrench with a ¾-inch hexagon socket (which may be obtained separately) and four extra sockets fitting it. These extra sockets have ⅝, 11/16, 13/16 and ⅞ inch hexagon openings. The ratchet socket wrench has a seven-inch black enameled iron handle and a very strong ratchet that can be used for either right or left hand work. The lignumvitae head runs on ball bearings. Each set is packed in a strong and attractive hard wood box.

**Manufactured by Goodell-Pratt Co., Greenfield, Mass. Price of set $3.50. Price of socket wrench with ¾ inch hexagon socket, $1.70.**

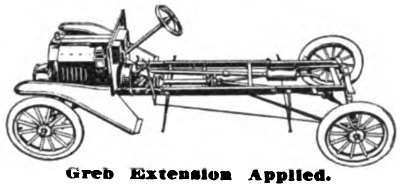
## PIPE AND CIGAR LIGHTER.

There is nothing more annoying to the motorist than to be obliged to slow up his car or pull up to the curb in order to light his pipe or cigar. The device shown in the illustration herewith is designed especially for lighting the pipe, or can be used equally well for lighting a cigar or cigarette. When the motorist wishes to light his pipe or cigar he simply reaches for the lighter, takes it from the holder, presses the button and a light is immediately available, wind or weather making no difference to the action. The pipe lighter is equipped with 10 feet of cord and designed for connection with the storage battery. The cord is automatically reeled up when not in use upon a special winder by spring tension.

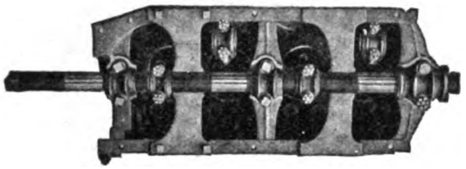
**Manufactured by the Metal Specialties Mfg. Co., 730-738 W. Monroe St., Chicago, Ill. Price complete with winder, $4. Without winder, $1.50.**



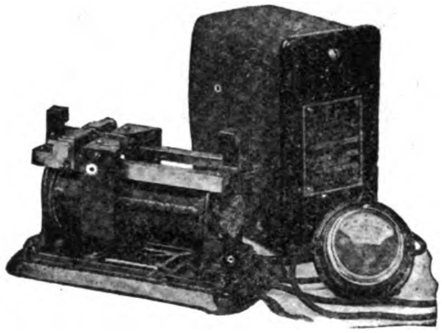
Flexo Laminated Belt.



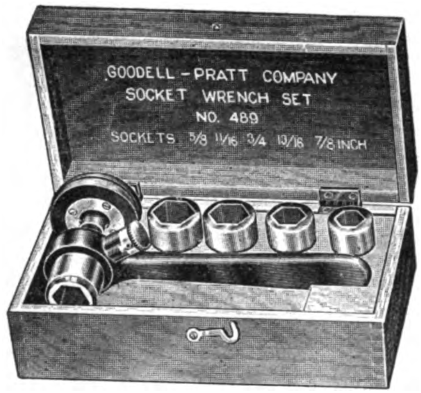
Greb Extension Applied.



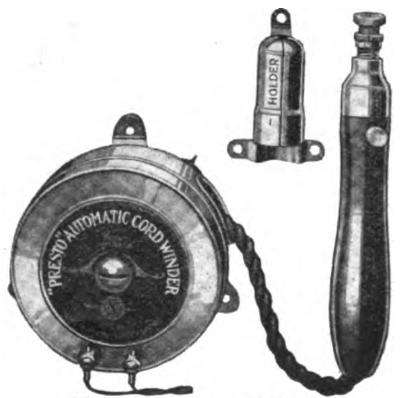
Dyer Bearing Reamer.



F-F Battery Booster.



Socket Wrench Set.



Pipe and Cigar Lighter.

## BEARING REAMER.

Every one familiar with the work of fitting main and connecting rod bearings of an engine knows that scraping connecting rods to line up with the cylinders is a very tedious job and if great care is not observed, very unsatisfactory. The Dyer Reamer is a simple tool, which is designed to eliminate this work and when used leaves a smooth, glassy finish to the bearing surface. The reamer has leads of .004 of an inch at the end of each fluke and is held in line by two adjustable bearings which are bolted to the crank case while it is being used. It can be seen from the illustration that by the employment of this tool the lining up of all bearings is fully assured.

**Manufactured by the G. H. Dyer Co., Cambridge, Mass. Write for catalogue of tools and prices.**

## THE GREB EXTENSION.

The demand for truck delivery exists in practically every part of this country, and is constantly growing. The Greb Extension is designed to lengthen a Ford car to 115 or 130-inch wheelbase, thus making that pleasure car into an economical and efficient 1000-pound delivery truck. The equipment as furnished consists of two channel iron extensions, which are riveted to the frame, thus eliminating any possible chance of breakage. A universal and drive shaft assembly, all bolts, screws, rivets, lock washers and nuts complete with full directions.

**Manufactured by the Greb Co., 202 State St., Boston, Mass. Price for 115-inch extension, $55; for 130-inch extension, $60.**

## FLEXO LAMINATED BELTS.

Flexo laminated V shaped belts fill a long felt need for a strong, smooth acting fan belt. Flexo belts are made in sections cut from solid back belting hides, assembled with steel copper plated rivets and fastened with machine screws and nuts so that they may be readily lengthened or shortened and adjusted. These belts may be obtained in widths from ⅝ to 1⅛ inches, and lengths as desired, endless or in rolls of 50 feet, with sufficient rivets and burrs or bolts and nuts for making them endless.

**Manufactured by Detroit Leather Works, Detroit, Mich. Prices upon application.**

### TITANIC SPRINGS.

Few people realize the extreme importance of the automobile spring. It must be strong enough to withstand road shocks, yet flexible enough to permit of easy riding. The spring illustrated is the result of expert designing. The feature being the absence of weakening holes. This spring is strengthened instead of weakened by being reinforced with a patented arch and attached with a clamp entirely outside the spring. Quick service is claimed by the manufacturers who keep a large stock room full of ready-to-ship springs for practically every make of standard cars. Distributing stations are established in all the large cities throughout the country. These springs are guaranteed forever against centre breakage, and for one year against any breakage at all.

**Manufactured by Tuthill Spring Co., 760 Polk St., Chicago, Ill. Prices and catalogue upon request.**

### RETLAW FORD CAR GAUGE.

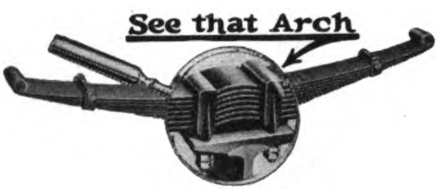
A gauge by which is indicated the number of gallons of gasoline in the tank is a convenient and time saving accessory for any car. Not only handy, but also very practical for determining the actual mileage made upon a certain consumption of gasoline; an important item to watch now that fuel is so high. The Retlaw gasoline gauge for Ford cars is designed to fill this want. This gauge consists of a float mechanism suitably linked to a dial upon which is plainly marked a scale in gallon units. The gauge is very easily and quickly applied and when in place forms the filler cap.

**Manufactured by Retlaw Mfg. Co., 812 Woodbridge St., East, Detroit, Mich. Price in U. S., $1.**

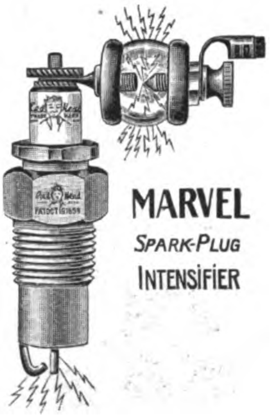
### THE THERMOMAT.

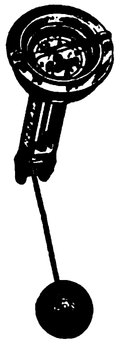
With a car cooled by the Thermo-Syphon system the efficiency of the system is dependent upon proper circulation. Should steam pressure develop, the efficiency is materially decreased at times and the temperature of the engine immediately increases, often with disastrous results. The Thermomat is said to eliminate any possible chance for steam pressure to develop. It consists of a tank or vacuum chamber designed to be attached in the fore door of the car, with two pipes to connect it with the engine water circuit. The upper tube leads from the engine water outlet through the dash into the top of the vacuum condenser tank. The lower tube passes from the water space or bottom of the vacuum tank through the floor board to the engine water inlet elbow. The position of the tank is such that when the radiator is full the tank is a little over half full of water. As long as the engine is cool the condenser does not operate, but when the water begins to boil the condenser takes up its work and operates as fast as steam is generated.

**Manufactured by the Cawle Co., 506 City Trust Bldg., Indianapolis, Ind. Price, $12.50.**

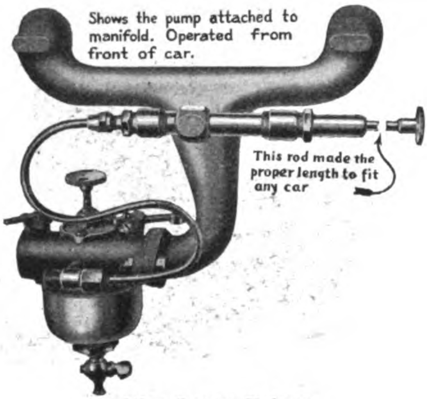


Titanic Spring.

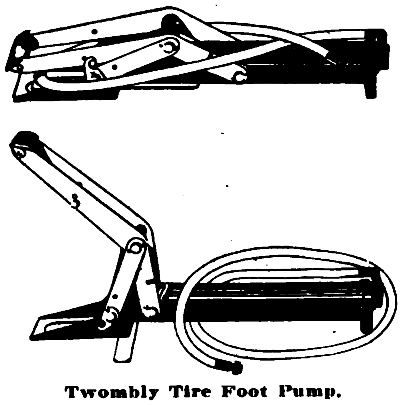




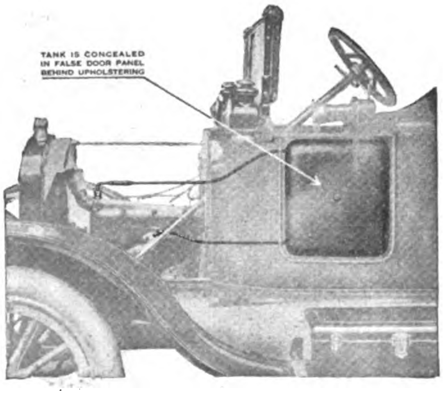
Retlaw Gauge.


Shows the pump attached to manifold. Operated from front of car.
This rod made the proper length to fit any car

Maltby Spray Primer.



Twombly Tire Foot Pump.



Application of the Thermomat.

### MALTBY SPRAY PRIMER.

A compact little device made of brass with which the manufacturers claim a gasoline engine may be started in "zero" weather is known as the Maltby spray primer. The primer may be attached to the manifold of any car, installed either through the radiator in hand cranked cars or through the dash in cars equipped with engine starters. The action of the primer is: A charge of gasoline is drawn into the primer by the pump action and injected into the intake manifold in the form of an atomized vapor.

**Manufactured by Maltby Auto Specialty Co., Battle Creek, Mich. Retail price, $7.50. Special discount to dealers.**

### MARVEL SPARK INTENSIFIER.

Our illustration shows a device by which, the makers say, the spark between the electrodes of the spark plug may be intensified. They further claim that a plug short circuited from accumulated soot, carbon or grease, or broken insulation, may be made to fire as perfectly as if it were new by the use of this device.

**Manufactured by the Marvel Mfg. Co., 1020 Washington Blvd., Oak Park, Ill. Price, 75 cents each, or $3 per set of four.**

### TWOMBLY TIRE FOOT PUMP.

A new way of pumping tires is introduced by the Twombly tire foot pump. As is indicated by the name, the pump is designed to be operated by foot pressure, or what amounts to the same thing, the weight of the body. To operate it is only necessary to place the ball of the foot on the lever and step downward. The spring brings the lever up again. This is said to be essentially a high pressure pump, as the matter of pumping from 70 to 80 pounds pressure is as easy as raising the pressure to 40 pounds. One of the features claimed is its compactness, being only 17 inches long, three inches high and three inches wide.

**Manufactured by Schlesinger-Redburn Corp., and marketed by Abbott Motor Equipment Co., Broadway and 59th street, New York City.**

### BEN AUTOMOBILE JACK.

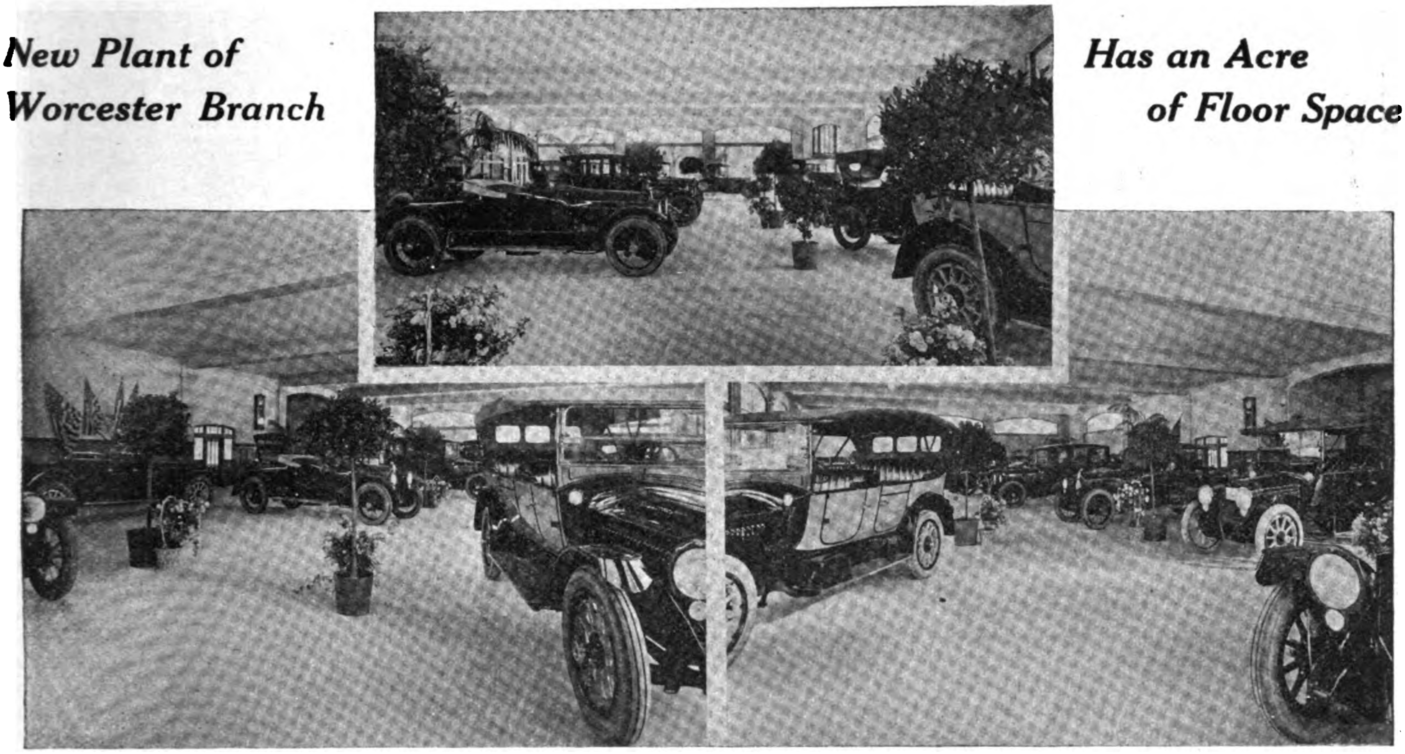
Operating upon ball bearings which carry the entire weight of lifting, the Ben automobile jack is something novel in its line. It is operated by turning a folding handle to either the right or left, which acts upon a spiral screw engaging with dogs on the lifting bar through a gear and pinion. All of the working parts are enclosed in a solid, water proof outer case, packed in grease to insure perfect lubrication, and fully protected from dampness, dirt and dust.

**Manufactured by Wagner-Hoyt Electric Co., 1902 Broadway, New York, N. Y. Price, $6 each.**

# MODEL PACKARD SERVICE STATION

## *New Plant of Worcester Branch*

## *Has an Acre of Floor Space*

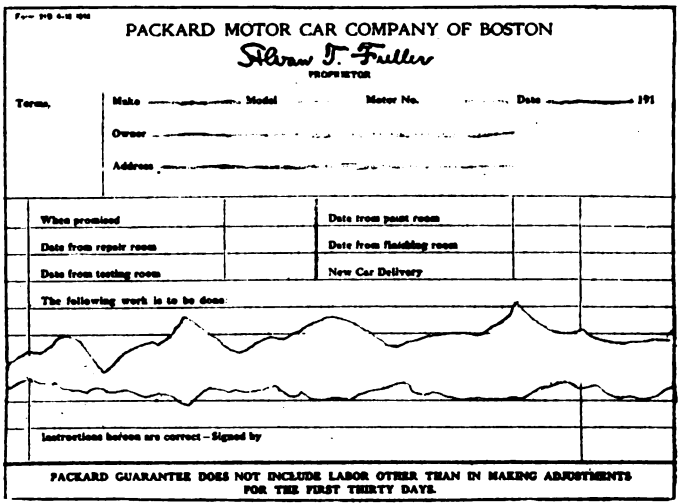


Three Views of the Salesroom of the New Service Station at Worcester of the Packard Motor Car Co. of Boston.

THE Packard Motor Car Co. of Boston opened its new service station and sales room in Worcester on April 19 with a large exhibition of pleasure cars and trucks in the spacious show room, which is the largest in New England. Congressman Alvin T. Fuller, proprietor of the company, was present at the opening and assisted Allen N. Davis, manager of the branch, in receiving visitors.

There are some 600 odd Packard owners in the territory covered by the Worcester branch and in order to render them the same high class form of service that Packard owners receive elsewhere, Mr. Fuller has invested over $100,000 in the new plant, exclusive of equipment. It is located on a very convenient site at Shrewsbury and Aitchison and Plantation streets on the road leading from Worcester to Boston. The building is 394 feet seven inches in length, with a head house 116 feet wide for 69 feet, and 70 feet wide for the remainder of the length, and has two stories for 145 feet at the rear end. A main floor extends from the front to the rear, which is used for sales room, garage and shop, while the ground floor at the rear end is used for storage. This floor being accessible from the level of the street and yard no elevators are necessary. In all there is about an acre of floor space. There is ample property on the site, however, for expansion in the future and for open storage.

The building is of concrete, brick and steel construction, high vaulted and with spacious windows between each supporting pillar, extending entirely around the building on each floor. The headhouse, which fronts on Shrewsbury street, is 116 feet in length, irregular in depth, being 60



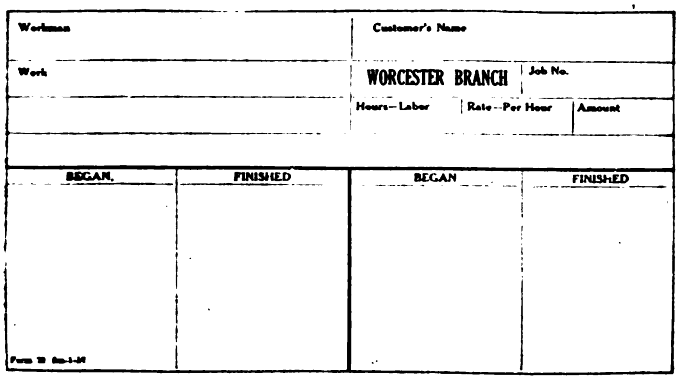
PACKARD MOTOR CAR COMPANY OF BOSTON
Alvan T. Fuller
PROPRIETOR

Terms,
Make Model Motor No. Date 191
Owner
Address

When promised
Date from repair room
Date from testing room
Date from paint room
Date from finishing room
New Car Delivery
The following work is to be done:
Instructions hereon are correct—Signed by

PACKARD GUARANTEE DOES NOT INCLUDE LABOR OTHER THAN IN MAKING ADJUSTMENTS FOR THE FIRST THIRTY DAYS.

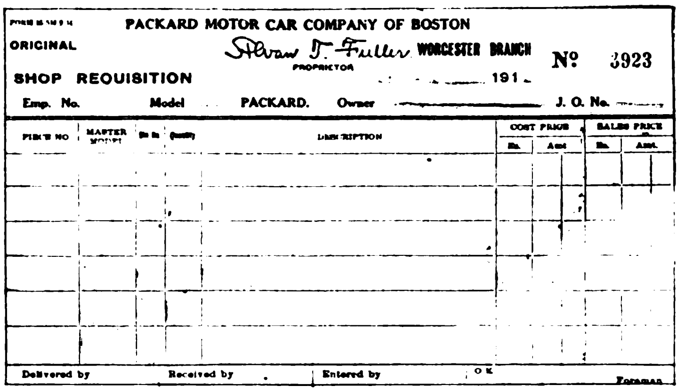
Repair Order Blank, Filled When Machine Enters the Shop.



Workman
Customer's Name
Work
WORCESTER BRANCH
Job No.
Hours—Labor
Rate—Per Hour
Amount

| BEGAN. | FINISHED | BEGAN | FINISHED |
|---|---|---|---|

Blank Stamped by Time Clock When Work Is Begun and Ended.

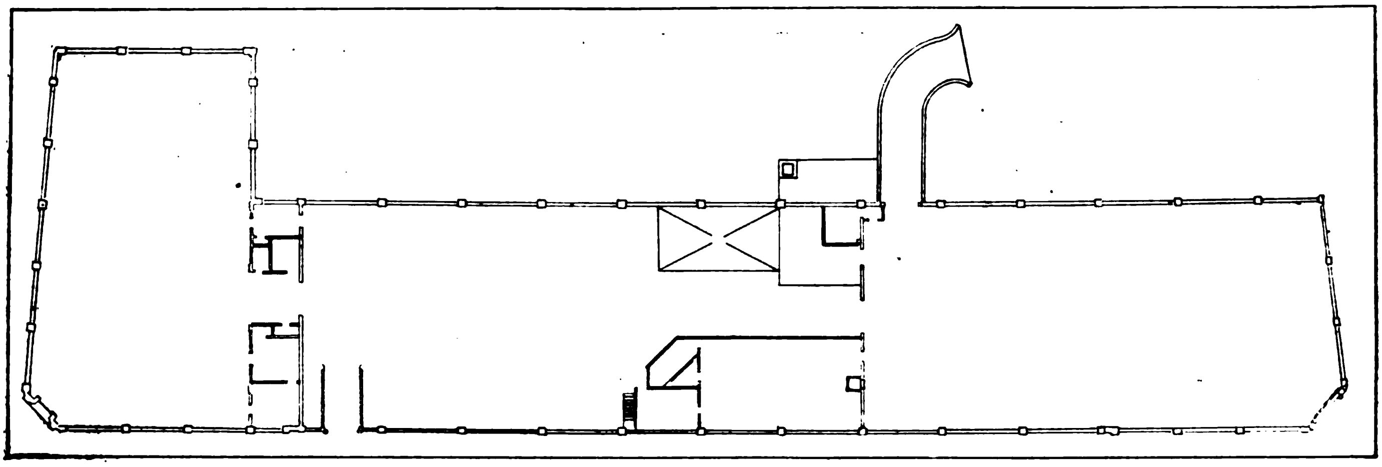


PACKARD MOTOR CAR COMPANY OF BOSTON
ORIGINAL
Alvan T. Fuller WORCESTER BRANCH
PROPRIETOR
SHOP REQUISITION
191
№ 3923
Emp. No. Model PACKARD. Owner J. O. No.

| PIECE NO | MASTER MODEL | | Quantity | DESCRIPTION | COST PRICE | | SALES PRICE | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Ea. | Amt. | Ea. | Amt. |

Delivered by
Received by
Entered by
O K
Foreman

Stock Requisition Used by Workman for Material and Parts.



**Plan of the Main Floor of the Packard Service Station at Worcester, Mass., the Headhouse Being the Salesroom, and In Order from Left to Right the Offices, Garage, Battery Room, Stock Room, Accessory Store, Washstand, Lavatories and Repair Shop.**

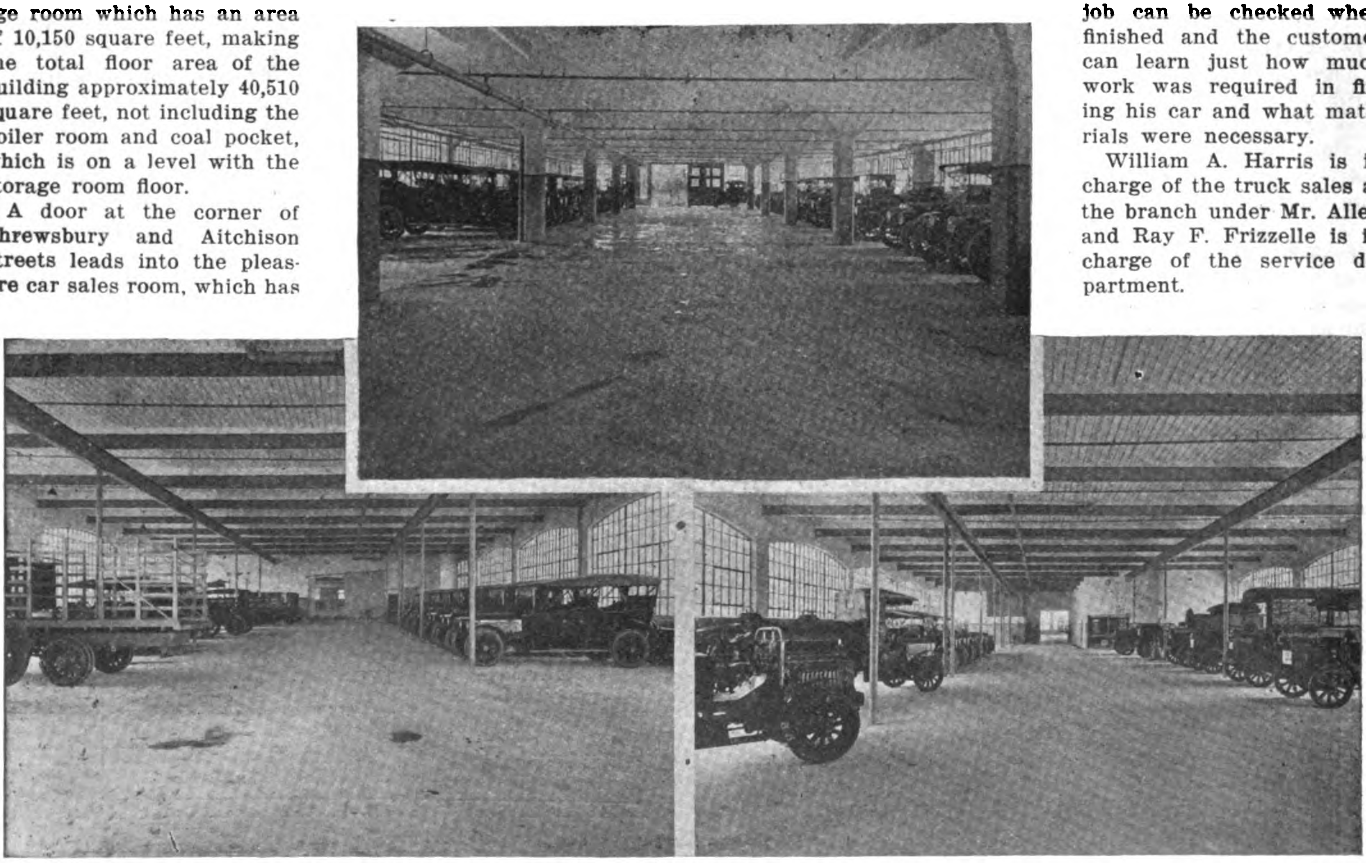
**feet four inches wide at the narrowest end and 69 feet at the widest, with a total area of about 7540 square feet. Behind the headhouse the building extends back 325 feet. The first 15 feet of the depth for the entire width of the building where it joins with the headhouse is devoted to the offices of the manager, assistants, clerical force and the lavatories. For a distance of 165 feet eight inches back of the offices the space is occupied by the garage and the remaining 144 feet nine inches houses the repair shop. The office and entrance to the garage occupies about 1050 square feet, the garage 11,520 square feet and the repair shop 10,150 square feet. On the floor below the repair shop there is a used car storage room which has an area of 10,150 square feet, making the total floor area of the building approximately 40,510 square feet, not including the boiler room and coal pocket, which is on a level with the storage room floor.**

**A door at the corner of Shrewsbury and Aitchison streets leads into the pleasure car sales room, which has neither posts or floor obstructions of any kind to mar its spacious appearance or convenience in handling the cars. The woodwork is quartered oak paneling and the plaster is buff tinted. Quarter oak is also used on the woodwork in the offices with marble trimmings.**

**The garage is reached by a ramp from Aitchison street. A stock room, battery room and accessory store is located in the garage. The accessory store, which will carry a large stock of accessories, will be open at all convenient hours so that customers' needs may be filled.**

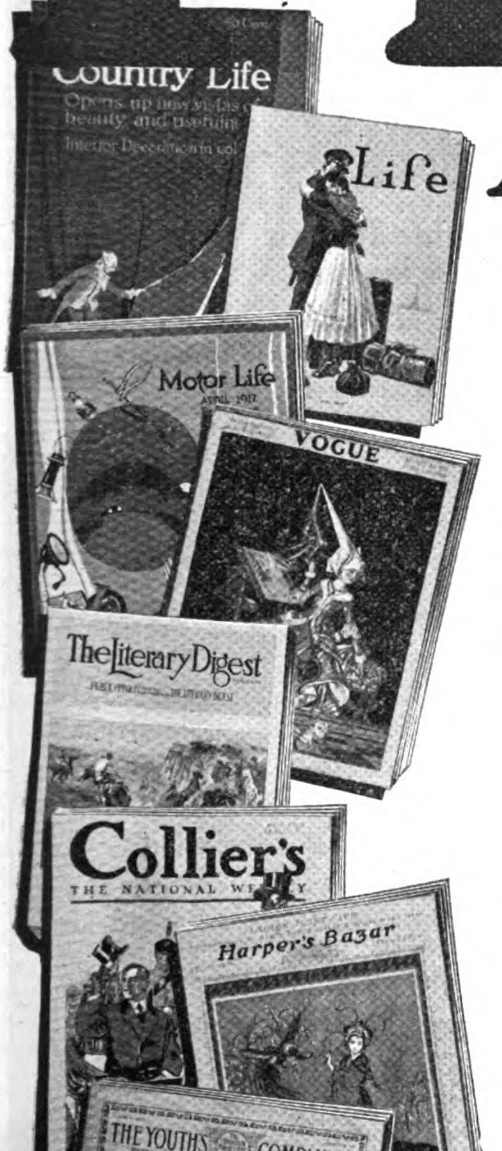
**In the service department the same principles of operation are followed out as in the main plant at Boston. Every customer is cared for with the idea of keeping him satisfied and giving him the highest grade of service and work at normal cost There are three records used in passing work through the service department. A clerk fills out an order, entering every detail when a machine is taken into the shop to be repaired or adjusted. When employee starts to work on the car he enters the time on a work ticket or time card, which is stamped mornings, noons and nights until the employee or employees turn it over as finished. When material or parts are required in the work they are obtained from the store room on blanks that are signed by the workman and service superintendent. With this system the job can be checked when finished and the customer can learn just how much work was required in fixing his car and what materials were necessary.**

**William A. Harris is in charge of the truck sales at the branch under Mr. Allen and Ray F. Frizzelle is in charge of the service department.**



**The Main Floors of the Service Station: Above, Department for the Storage of Used Vehicles Under the Repair Shop; at Left, Looking from the Entrance to the Garage Through the Repair Shop; at Right, Looking from the Repair Shop Through the Garage and Sales Room.**

# FISK


Country Life
Life
Motor Life
APRIL 1917
VOGUE
The Literary Digest
Collier's
THE NATIONAL WEEKLY
Harper's Bazar

## Advertising Bulletin for May

NOW that the motorist is out on every road, Fisk advertising is speeded up. This month marks the beginning of bigger space—more color—and the most attractive and compelling sales forces yet used. Look at this schedule and then realise what it means in profit possibilities for you. This is the kind of help you want—and it's what we're giving you. Fisk advertisements to be run during May are as follows:

| | | | |
|---|---|---|---|
| **Saturday Evening Post** | **Center spread in color** | **Town and Country** | **Back cover in full color** |
| **Harper's Bazar** | **Second cover in full color** | **Literary Digest** | **Second cover in color** |
| **Motor Life** | **Second cover in full color** | **Boys' Life** | **Half page** |
| **Country Life** | **Page in full color** | **Saturday Evening Post** | **Two facing pages** |
| **Sunset** | **Page in full color** | **Christian Herald** | **Cover in full color** |
| **American Boy** | **Page in color** | **Life** | **Second cover in color** |
| **Vogue** | **Third cover in full color** | **Christian Herald** | **Half page** |
| **American Motorist** | **Second cover in color** | **Youth's Companion** | **Back cover in color** |
| | | **Collier's** | **Full page** |

And in addition to all this we are using pages and covers in color in 34 big State Farm Journals, reaching practically all the farmers in the country.

***We are ALWAYS doing something for Fisk dealers.***

*Write Dept. A for further information about the Fisk Dealer proposition—get your share of Fisk profits.*

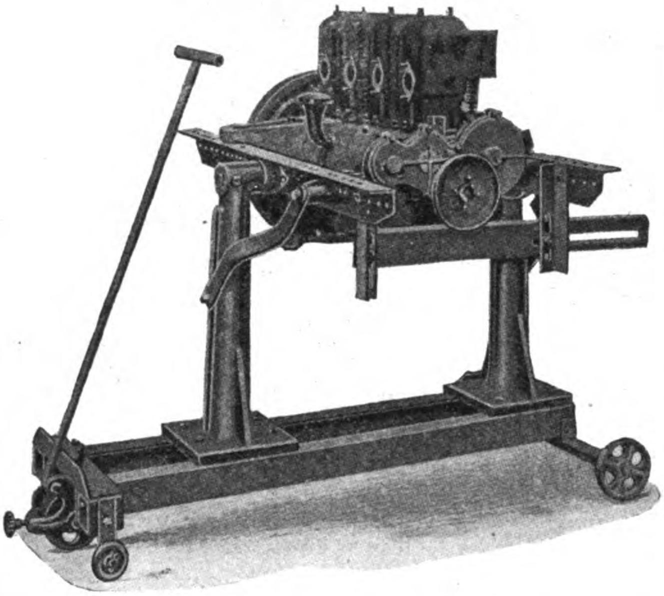
**THE FISK RUBBER COMPANY**
of N. Y.
**Chicopee Falls, Mass.**

THE YOUTH'S COMPANION
UNCLE TIM'S STRATEGY
BOYS' LIFE
THE SATURDAY EVENING POST
Town & Country
Sunset
The March
American Boy
15 Cents
A New Story of School Character and Baseball
THE COUNTY PENNANT
By William Heyliger Begins In This Issue
Christian Herald
AMERICAN MOTORIST

**(When Writing to Advertisers, Please Mention the Accessory and Garage Journal.)**

# MANLEY GARAGE EQUIPMENT

## EFFICIENCY AND INCREASED PROFITS



Portable Stand in Horizontal Position with 4-Cylinder Motor, Showing Use of Three Point Suspension Bar

**With this**

## EVERY WAY ENGINE STAND

### Your Engine Repair Work Becomes a Pleasure.

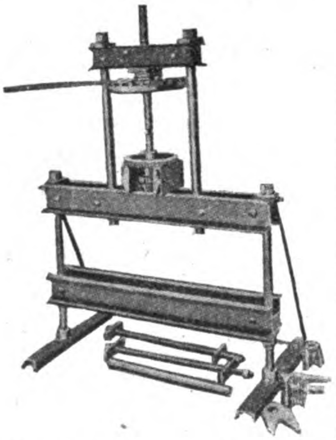
**The Danger of Damaging the Engine and Injuring the Workman is Eliminated**

Holds an engine in any desired position, 100 if wanted. Locked rigidly in each position. Mounts easily any type of motor suspension, 4 point, 3 point or Ford. Universal in all its adjustments. Motors must be overhauled at regular intervals and this work is the most accurate on the whole chassis and cannot be properly handled without this stand. It allows the workman to get at any part easily and to the greatest advantage. It therefore promotes better work, quicker work and accurate work. The only practical stand, and hundreds sold. Built Stationary and Portable.

**Price, Stationary : : $37.00**
**Price, Portable : : : $49.00**

## THE UNIVERSAL AUTO PRESS

**Capacity 22 tons........................42 in. clearance**



**Specifications.**

Upper Press takes work 18½ in. wide x 19 in. under screw. Lower Press 42 in. wide x 21 in. between tables. Maximum length under screw 46 in. Hand wheel 14 in., threads in nut 3½ in. long. Built of heavy 5-in. channels throughout. Weight 450 lbs. Total height 70 in. Floor space 46 in. x 30 in.

**A Press Is a Necessity and Used Continuously.**

A powerful press is now recognized as a necessity in every Garage, large or small. But unless the Press has the necessary capacity both in pressure and clearance to handle every piece of work which must be done, it is of little use. The Manley Press has both, and in addition it has

**Other Features found in no other press, which are of vital advantage for Garage work.**

**These Features Are**

1ST. HIGH SPEED leverage of 1000 to 1 for ordinary work. (Ten times quicker than a ratchet.)

2ND. HIGH POWER leverage (Ratchet) of 2200-1 to 5000-1 for extraordinary work. (Tremendous power—little effort.)

**Screw may be struck a blow** under pressure with no damage to Press. (Equal to a hydraulic Press.)

**42-IN. CLEARANCE.** This clearance is necessary, look around and satisfy yourself that it is.

LOWER TABLE instantly adjustable on pins (no bolts to remove no danger to workman).

BOTH TABLES have wide laces to properly support the work.

SCREW 2 in. diameter 4 pitch square thread, 12 in. travel. It does not revolve.

CHANNEL BLOCKING, properly braced (will not crush).

"V" Plate which automatically adjusts itself to any size arbor, mandrel or shaft.

## Quick Action Portable Benches

Veritable floating repair shops. Take these benches to the car with all the necessary tools, parts, etc. Is this not the logical way?

They are the most used pieces of equipment in any Garage—are never idle, and are therefore great money makers by speeding up work. No. 1 Bench (shown in cut) is intended to be used all over the Garage for light work. No. 2 Bench is for heavy work and intended to be used in the repair shop right at the car, thus saving hundreds of steps to the Stationary benches every hour. Wheels can be locked for filing, etc.

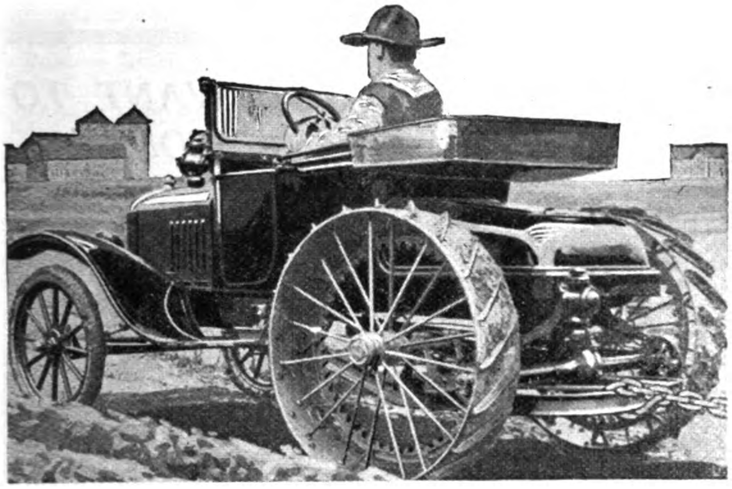
*Also Portable Floor Cranes—Specialized Construction for Automobile Work.*

## UNITED ENGINE & MFG. CO., - - - - Hanover, Pa.

# *Makes Any Ford a Powerful Tractor*

# KNICKERBOCKER FORMA-TRACTOR

REGISTERED



## $178

**F. O. B. New York**
**Less Dealer's**
**Discount**

HOW many farmers in your territory own automobiles? Every farmer with a car is a red-hot prospect for a Knickerbocker Forma-Tractor. He needs it. He'll want it as soon as he sees a demonstrator.

Act now and capture the exclusive agency for your territory. If you wait, you'll be sorry. Power farming has come to stay, and the Knickerbocker Forma-Tractor plus a Ford makes the least expensive and most powerful tractor ever produced.

### Profits for the Dealer

Attractive Dealer's discount means easily earned profits for you.

Quick, steady sales, because of low cost to farmer.

Quick turn-over enables you to become a successful dealer with small capital.

You run no risks. We are responsible.

Absolute protection to dealers through exclusive agencies.

### Service for the Farmer

Easily and quickly clamped on by the customer.

Traction wheels can be removed and regular wheels put on in fifteen minutes.

No strain on automobile.

Will pull plows, drills, discs, mowers—anything horses are used for.

Turns short in corners. Wheel base 84 inches.

***Write today for full description, specifications, terms and exclusive agency.***

**KNICKERBOCKER MOTORS INC.** *Section 6-11* **170 Broadway**
**New York**

NEW YORK CHICAGO BOSTON DETROIT

Subscriptions:
The United States and Mexico
$2.00 a year; Canada, $3.00;
Foreign Countries in Postal
Union, $4.00 a year
20 cents a copy.

THE ACCESSORY —AND— GARAGE JOURNAL

Remittances:
Should be made by Check, Draft,
Postoffice or Express Money
Order, or Registered Letter.
Money enclosures must
be at sender's risk.

William H. Black, Treasurer. D. O. Black, Jr., Secretary

AUTOMOBILE JOURNAL PUB. CO. Published the 15th of Each Month. Times Building, Pawtucket, R. I.

Entered as second class matter, December 30, 1911, at the Postoffice at Pawtucket, R. I., under Act of Congress of March 3, 1879.

**Let the Puritan Help You Reduce Your Upkeep Expense**

**Lower priced auto parts. Prompt service.**

**GAS TANKS**—30x15x12 each, $3; round tanks, 29x12, $3; rear end steel tanks, 30x12, $10; square tanks, $1.50; miscellaneous oval tanks, $3 to $8.

**WHEELS**—Front and rear for many makes of cars, each, $3; set of four wheels and five rims, per set, $25; demountable wheels for Fords, furnished in black or natural wood finish, set of four wheels and five rims, $18.

**AXLES**—Left hand drive front axles, complete with wire wheel hubs, $25; rear axles and transmission units for 1914 Maxwell, E. M. F. 30, Everitt 30, for $55. Many others from $15 up.

**BODIES**—Roadster and touring car, many sizes, price from $15 up. Speedster bodies for Fords, will fit any model chassis since 1910, complete with gas tank, running boards, dustshields and fenders, for $55.

**STEERING GEARS**—Right and left hand drive with frame and dash brackets, each, $10.

**CARBURETORS**—Schebler model O, 1¼", $8.20; model L, 1¼", $10; model R, 1", $10; Stromberg type K, $8.20; Bennett, 1¼", $3.95; Kingstone and Holly, top intake, 1¼", $4.50; for Fords, $5.40. Write for our special carburetor circular. Hundreds of bargains listed.

**GENERATORS** — Deaco cylindrical shape lighting generators; regular, $40 outfit, our price, $10; Auto Lite generators, $15.

**FENDERS**—Hayes crown fenders for Fords, per set of four, $13; long slope speedster fenders for Fords, complete with running boards and dustshields, per set of four, $7.

**STEERING WHEELS**—18" diameter. Aluminum spiders for Fords, each, $3.

**TOPS**—All kinds and sizes for Fords, one man T. C., mohair, $30; rubber, $27.50; four bow mohair, $21.50; rubber, $20; roadster, mohair, $21.50; rubber, $18; one man silk mohair, will fit Briggs-Detroiter, King 8, 1914 Dort, 1914 Maxwell 25, $37.50. All complete with curtains and dust boot.

**SHOCK ABSORBERS**—Hartford, for any make of car, with fitting, per set of four, $25.

**WINDSHIELDS**—Many types and sizes. Price from $8 up.

Write for a copy of our Bargain Bulletin.

**Puritan Machine Company**
**All Parts for All Cars**
**51 Tenth Street Detroit, Mich.**

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**BARGAINS**

| | |
|---|---|
| **MAGNETOS.** | |
| Bosch Du-4 Variable spark | $30.00 |
| Bosch Du-4 set spark | 25.00 |
| Bosch D4 and Dr4 | 25.00 |
| Bosch D6 and Dr6 | 30.00 |
| Splitdorf 4 cyl. Dixie, high tension | 25.00 |
| Splitdorf 4 cyl., Models A, T, X and D | 10.00 |
| National 4 cyl. low tension | 8.00 |
| Briggs 4 cyl. low tension | 8.00 |
| Remy 4 cyl., type R L | 15.00 |
| Simms SU4 high tension | 22.00 |
| **GENERATORS.** | |
| Deaco 6 volt | $12.00 |
| Auto Lite 6 volt | 15.00 |
| **COILS.** | |
| Splitdorf T S type | $10.00 |
| Splitdorf box type | 6.00 |
| Bosch type A | 12.00 |
| Remy box coils | 6.00 |
| Remy type LC and LE | 8.00 |
| Briggs box coils | 6.00 |
| **PREST-O-LITE TANKS.** | |
| Model B., fully charged | $8.00 |
| Model E., fully charged | 7.00 |

We REPAIR any make magneto, coil, lighting generator or starter and give 24 hour service. Member Detroit Automobile Trade Association.

**Detroit Magneto Exchange**
**192 Grand River Ave, Detroit, Mich**

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**Scored Cylinders**

**Made Equal to New Without Reboring.** We will fill your scores with a nickel and silver composition, with our new process. No heating to warp cylinders. Same piston and rings used. Complete information free. Reshipped 24 hours after received. We also sell the outfit to garages. Experience not necessary.

**NEW CHEMICAL PROCESS CO.**
**6 W. Ross St. Wilkes-Barre, Pa.**

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**GEARS**

**FOR TRANSMISSIONS AND DIFFERENTIALS**
**Write our Sales Department About Your Requirements.**

**SERVICE GEAR & MACHINE CO.**
**Reading Pennsylvania**

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**Debts Collected Quickly!** Established 25 years; same address. WM. H. DODD, Dept. D, 87 Nassau St., New York.

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***DO YOU WANT TO SAVE MONEY***

Then why pay full prices for gears and axles when we can save you from 25 to 50%. We have gears and axles in stock for over 100 different makes of cars.

**AMERICAN MOTORS PARTS CO.,**
**Manufacturers of Auto Parts,**
**430 No. Capitol Ave.,**
**Indianapolis, Ind.**

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**SAVE 50% ON PARTS**

**Wheels, Axles, Gears, Bearings, Cylinders, Pistons, Crankshafts, Camshafts, Crank Cases, Transmissions, Hubs, etc., for E. M. F. 30, Maxwells Q, F, K, G, Overland 38, 42, Reo 1910, Empire 20, Buicks 10, 17, 19, Oakland 1910, Cadillac 1909-12, Mitchell 1907-12, Flanders 20, Warren 30. Ask us about any part for any Standard Make or Orphan Car. Prompt service. Money refunded if not satisfied. AUTO PARTS CO., 4100 Olive St., St. Louis, Mo.**

---

**We CONTROL The OIL**

No carbon, more power, less fuel. Motor runs like new all the time. No mystery, plain facts, results guaranteed. Write for booklet. Automobile Accessories Co., 816 W. North Ave., Baltimore, Md., or Auto Appliance Co., 301 W. 55th St., New York.

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**"DIAMOND"**
**RADIATOR CEMENT**

Saves costly Radiator Repairs. Retails 35c, wholesales 15c in dozen lots. Special quantity price.

**DIAMOND AUTO SPECIALTY CO.,**
**4-8 Lawn St., Rochester, N. Y.**

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**WANTED** — Manufacturers Agents and Salesmen; automobile accessory; every section United States and Canada for manufacturer planning national campaign. Also representatives in England, France, Italy, Russia, Argentine, Brazil. Address Box D, A. & G. Journal.

## INDEX TO ADVERTISERS

Page
A. B. C. Starter Co............Cover
Adamson Mfg. Co................ 3
Advance Auto Accessories Corp.... E
Aerofram Co., The...............60
American Electric Air Pump Co...68
American Motors Parts Co........54
American Technical Society.......63
Apex Mfg. Co....................58
Apperson Bros. Automobile Co....67
Automobile Accessories Co........54
Auto Parts Co....................54

Bearings Service Co............. 4
Bowser & Co., Inc., S. F..........63
Brunner Mfg. Co.................. 1
Bunting Brass and Bronze Co......70

Calculagraph Co..................61
Champion Ignition Co.............. B
Chicago Tubing and Braiding Co...70
Commercial Truckmobile Co.......59
Culver-Stearns Mfg. Co...........10
Cutter, Geo. A....................65

Detroit Battery Co................59
Detroit Magneto Exchange........54
Detroit Piston Ring Co...........58
Detroit Starter Co................ 6
Detroit Truck Co..................58
Diamond Auto Specialty Co........54
Dixon Crucible Co., Jos...........72
Dodd, Wm. H.....................54
Dyer Co., G. H..................... A

Ever-Tight Piston Ring Co........66

Faw, Inc., J. H...................63
Fisk Rubber Co...................51
Fitzgerald Mfg. Co............... 8
France Mfg. Co...................64

Garford Motor Truck Co..........70
Gardner Governor Co.............58
Gibson-Hollister Mfg. Co........32-33
Goodell-Pratt Co.................. 5
Gray Motor Co....................68
Greb Co., The.....................68
Greenfield Tap and Die Corp......64

Harton & Co., Thos J., Inc........60
Harvey Spring Co.................59
Haywood Tire and Equipment Co.. D
Hess-Bright Mfg. Co..............66

Indian Refining Co................61
International Metal Polish Co......60

Jandorf Auto Co...................55
Jenkins Vulcan Spring Co..........69
Johnson Gas Appliance Co.........62

Knickerbocker Motors, Inc.........53
K & W Rubber Co................ H

Liberty Loan, The................. F

JANDORF
Auto Co.
DEALERS IN
NEW STANDARD MAKE
Factory Second
TIRES
Write for Lists and Prices
JANDORF AUTO CO.
1763 Broadway New York

Do You Want Foreign Business?

The Motor Vehicle market is open to all American producers of cars, trucks, parts, fittings, supplies, accessories, mechanical and electrical equipment and tools.

We have the only direct means through which to reach this market. Every manufacturer has the means.

FOR FOREIGN BUSINESS ACT TODAY.

Automobile Journal Pub. Co. Times Building, Pawtucket, R. I.

## INDEX TO ADVERTISERS

(Continued)

Page
Mabey Electric and Mfg. Co.......64
Manufacturers Engine Co.........61
Martin Mfg. Co., The.............59
Maxfer Truck and Tractor Co......11
Mossberg Co., Frank...........Cover
Motor Specialties Co..............72
Mueller & Co., R. S...............66
Multiple Automobile...............54
Munson & Co., A. J..............63

National Cash Register Co......... 7
New Chemical Process Co.........54
New Departure Mfg. Co............67
New Era Spring and Specialty Co..62
Niehoff & Co., Inc., Paul G........60
Norma Co. of America............67

Pierce Governor Co...............63
Pillsbury Mfg. Co.................71
Prest-O-Lite Co., Inc.............2-67
Puritan Machine Co...............54

Ross-Gould List and Letter Co....70

Sanders Co.......................70
Scaife, Wm. B. & Sons Co........67
Schrader's Son, Inc., A............68
Service Gear and Machine Co......54
Service Motor Supply Co.......... C
Shotwell Pump and Tank Co......71
Standard Woven Fabric Co....Cover
Starrett Co., L. S.................12
Stevens & Co.....................69
Sullivan Motor Car Co............70
Swedish Crucible Steel Co........64

Ton-A-Ford Truck Co............ 66
Trade Circular Addressing Co.....58

United Engine & Mfg. Co..........52

Vanderpool Co....................58

Walden-Worcester, Inc.........Cover
Waterhouse Welding Co..........58
Wayne Oil Tank and Pump Co....72
Weston Electrical Instrument Co.. 9
Whittier Co....................... G
Williams Foundry and Machine Co.66

# *Four-Fifths of All New Cars Sold,—Excluding One Make—Are Sold to Customers Who Have Cars to Trade in Part Payment*

**This is the statement of the National Automobile Chamber of Commerce, the association of manufacturers that dominates the industry and has information that cannot be questioned. It is indorsed by the Motor & Accessory Manufacturers, Inc., another association of those engaged in the production of parts, equipment, accessories and supplies. There is no uncertainty of what this means,—that those who have cars to sell, that those who want to sell to car buyers, *MUST REACH THE OWNERS DIRECT***

This is the time to consider the value of the publications that circulate to car owners. The Automobile Journal is the oldest magazine published in America devoted to owners and drivers of pleasure cars. It is one of three motoring prints that devote their pages to and claim owners' circulation and prove it. All other publications devoted to the industry claim to be trade prints, with distribution almost wholly to trade interests.

The ANNUAL TOURING NUMBER of the Automobile Journal will have almost twice its usual circulation and will reach nearly 40,000 car owners. There will be no increase in cost to advertisers.

Car dealers are clamoring to manufacturers for support, maintaining that new cars are not selling as rapidly as they should. The opportunity to reach 40,000 car owners and stimulate business for dealers has too great possibilities for any manufacturer, or even the entire industry, to neglect.

This is not a condition created for the benefit of publications, but it is the cold truth that is pointed out by the leaders of the industry to those who have cars, equipment, accessories and parts to sell. The leading motoring magazine of the automobile world, so far as reaching owners is concerned, is the Automobile Journal.

There are great business possibilities in the Annual Touring Number. Why not boost business, encourage dealers and help them to help you by liberal advertising in this great annual edition.

Send your copy, or instruct your agency to do, today.

*See Opposite Page for Rates, etc.*

Automobile Journal
40,000
Copies

*Eleventh Annual*

# Touring Number

*Mailed*

*June Tenth*

## The Most Comprehensive Guide and Touring Book for Owners

The touring editions of the AUTOMOBILE JOURNAL have been used for years by car owners and those connected with the trade. These numbers are replete with information for touring all parts of the country. They are complete, authentic, always dependable and revised to the minute.

No motorist who has used it wants a substitute. It is found in cars, garages and service stations wherever there are highways in America.

## JUST A WORD MR. ADVERTISER

This affords to you the **One Opportunity of the Year** to reach the largest number of automobile owners ever reached by a single edition of a motoring publication.

Advertising in this edition brings quick results; its influence maintains during the entire touring season. And all this for the one expenditure.

**Send Your Copy, or Instruct Your Agency to do so, TODAY**

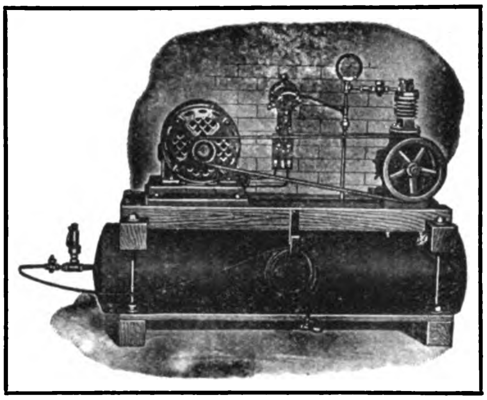
Page (type) 10x7¼ inches, two columns to page. Price, one insertion: Page $100; Half Page $55; Quarter Page $32. Printing in colors $30 per page additional a color.

**Last form closes June 9.**

**AUTOMOBILE JOURNAL** PAWTUCKET RHODE ISLAND

# GARDNER LINE

## *Air Pumps & Nuts*



**Free Air Unit** One of the many outfits we manufacture

**WE HAVE A PUMP
FOR EVERY SERVICE**

***Economical — Efficient and Cheap***

**CHICAGO**
1702 Fisher Bldg.

**NEW YORK**
302 Singer Bldg.

**PHILADELPHIA**
604 Arch Street

**LOS ANGELES**
Rix Compressed Air & Drill Co.
409-11 E. Third St.

**SAN FRANCISCO**
Rix Compressed Air & Drill Co.
505 Howard St.

## FOR 1917

# Automobile Mailing Lists

| | | |
|---|---|---|
| 36,931 | Auto Dealers, U. S.... | $50.00 or $2.50 per M |
| 8,884 | Ford Dealers.......... | 18.50 or 3.00 per M |
| 38,453 | Garages ............... | 50.00 or 2.50 per M |
| 36,431 | Repairs ............... | 50.00 or 2.50 per M |
| 45,298 | Supplies .............. | 60.00 or 2.50 per M |
| 1,136 | Auto Supply Jobbers.. | 4.00 complete list |
| 57,703 | Dealers, Garages, Supplies and Repairs in one list, no duplicates | 80.00 or $2.50 per M |

Have complete list Auto Owners and Ford Owners, $2.00 per M. Further particulars.

**TRADE CIRCULAR ADDRESSING CO.**
**166 West Adams St., Chicago**
**Franklin 1182**

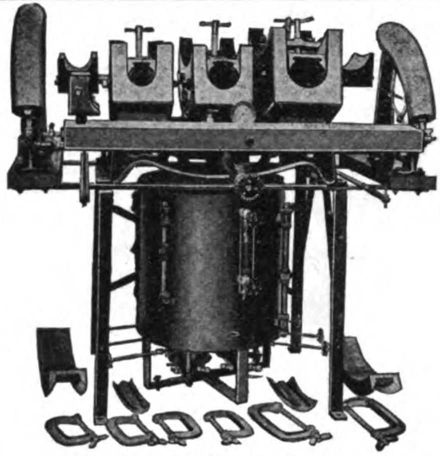
With the "Tonford" unit, any Ford old or new can be made into a one-ton truck. You can run it with but very slight increase in cost of operation as compared with the pleasure car. Its ability to take care of many more deliveries with the same cost of upkeep will quickly make it pay for itself.

# Tonford

TRADE MARK

**$325 f. o. b. Detroit**
***56 and 64 inch treads***

**DETROIT TRUCK COMPANY**
**Detroit, U. S. A.**



*Vanderpool 3 Cavity Vulcanizer*

**VANDERPOOL CO., Springfield, Ohio**

Jointless
THE
MASTER
RING
OF
PISTON
PACKING

# Jointless Piston Rings

There are no substitutes for Jointless Piston Rings. The Jointless affords every quality found in other rings and assures to all users a permanent, gas tight ring, more power, less carbon, increased mileage, less gasoline and lubricating oil.

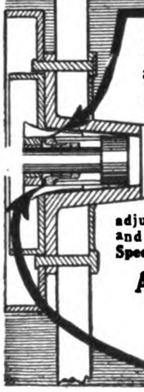
The Jointless eliminates all usual piston ring troubles. It is finely constructed and its efficiency makes the Jointless a money making and saving proposition for any owner of a pleasure car or truck.

**List Price $1.00**

**Sold by all Jobbers and Dealers.**

**DETROIT PISTON RING CO.**
**53 Richmond Ave. Detroit, Mich.**

# CURE LEAKY REAR AXLES



Avoid grease and dirt on hubs and wheels, oil-rotted tires, oil-soaked brake linings and dry-bearings on your FORD.

**KANT-LEEK WASHERS For Fords**

are the positive and inexpensive remedy. A set of four makes grease "stay put." Simple, nothing to adjust, easily applied. They'll end rear-axle bearing troubles and keep repair bills down.
**Special Discount for Dealers and Jobbers.** **Per Set, 90c.**

**APEX MFG., CO., Inc., St. Louis, Missouri.**

**Exclusive Selling Agent, H. BECKER.**
**Room 306 Monroe Bldg.,**
**104 So. Michigan Ave., Chicago.**

# WATERHOUSE

## WELDING OUTFITS $42

**The Standard Welding Equipment of the Nation**

Before you buy any welding outfit learn about the Waterhouse. In any shop it will bring business and big profits.
Write for our welding instruction book, free at request.

**WATERHOUSE WELDING CO.**
**3 Pelham Street, Boston, Mass.**

# Here's The Trade-Mark That Buyers Of Automobile Springs Are Learning To Look For

**Harvey** RACINE

The Harvey trade-mark is our guarantee of quality and means extreme limit in auto spring service. It protects the dealer and repairman, too, for it means that we, the manufacturers, must maintain the high standard we have established for Harvey Springs. These good springs are a live, money-making proposition for any dealer or repairman who wants to increase his spring replacement business—and profits. If you don't know our jobber in your territory, write for his name at once.

## Harvey RACINE Springs Do Not Break

They are made of the finest selected steel, have no weak spots and are guaranteed from end to end. If a spring proves defective at any point we will replace it. Harvey springs are made in sizes for practically every make and model of car. Each spring is an exact duplicate of the spring it is intended to replace and fits with an accuracy that will surprise you.

You owe it to your customers—to your own best business judgment to sell springs of recognized merit. Harvey springs meet every demand for wear and service and give absolute satisfaction to the car owner.

8

**FREE**

Every Dealer, Garageman and Repairman should write for the Harvey Auto Spring Book which contains a complete list of springs for all the leading makes and models of cars. Gives sizes, weights, measurements, prices, and other valuable information about automobile springs that has never been published before. It is a quick and ready reference book and an invaluable aid in ordering replacements. We mail it free.

**HARVEY SPRING CO.**
851 17th Street, RACINE, WIS.

**$350 and a Ford Chassis old or new**

Builders Hardware
W. H. GRIMM HARDWARE CO.

# TRUCKMOBILE

A Ford chassis, old or new, makes a 1 1-2 ton truck for all purposes without cutting rear axle or housing. The **Truckmobile** is the widest, longest, strongest, simplest truck attachment. It will double your deliveries at half the cost of horse and wagon delivery. Write today for Free Booklet "Making Pennies Deliver Tons."

**Biggest of them all!**

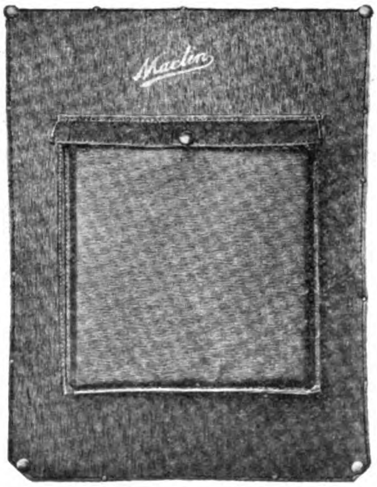
Commercial Truckmobile Co.
Dept. M-5, 1720 Michigan Ave. Chicago, Ill.

# DETROIT BATTERIES

For every make and model of motor car carrying an electric starting system. Replacements on cars no longer manufactured can be had promptly.

**Detroit Battery Co.**
Detroit, U. S. A.

FOR FORD OR CHEVROLET



**List Price, 75 Cents Each**

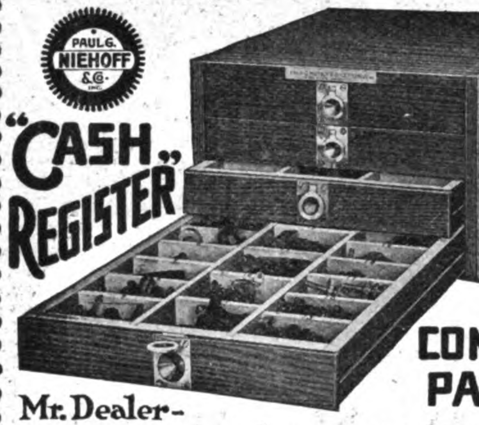
**An Ideal Equipment For Cars Without Door Pockets** that can be quickly installed and affords extreme convenience. Made of highest grade leather cloth, that will not crack or peel and has longer endurance than leather.

A fast selling profitable accessory. When ordering always state whether for Ford or Chevrolet.

Martin leather cloth specialties, the finest line made, includes Tire Covers, Radiator Robes, Tube Cases, Engine Robes, Robe Rail Bags, Water Buckets, Headlight Dimmers, Etc. Not equalled for quality, and sold for moderate prices.

*Write for Jobbers' and Dealers' Catalogue and Quotations*

**Martin Manufacturing Co.**
LANCASTER OHIO


PAUL G. NIEHOFF & CO. INC.

**"CASH" REGISTER of CONTACT PARTS**

**Mr. Dealer-**

This is "A Case of Good Business." WHY?

Because: It opens up a new field for you in the merchandising of contact parts for which there is an ever increasing demand.

Because: It keeps those valuable parts systematized so you know just where to find them, instead of scattered all over the shop.

The Niehoff "Cash Register" is a real necessity and can only be appreciated after you have put it into service. Delivered prepaid with an assortment of contacts such as will fit all standard cars or others, as you specify.

Write today for FREE illustrated booklet on contact parts and full information in starter and generator brush equipment -- most comprehensive and up-to-date.

PAUL G. NIEHOFF & COMPANY, Inc., Dept. A
Metallurgical Laboratories - Chicago, Illinois

*Ask your jobber about it*

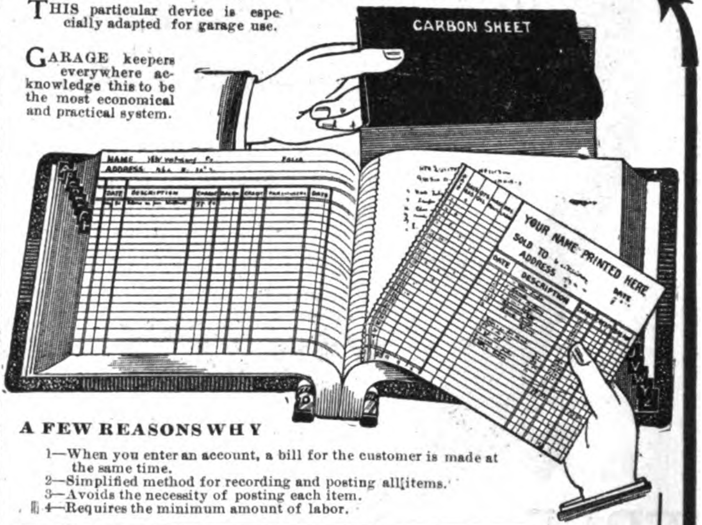
---

# SAVE TIME AND MONEY

## Our SPECIAL GARAGE Bookkeeping Plan Gives You the HIGHEST Possible EFFICIENCY

THIS particular device is especially adapted for garage use.

GARAGE keepers everywhere acknowledge this to be the most economical and practical system.



**A FEW REASONS WHY**

1—When you enter an account, a bill for the customer is made at the same time.
2—Simplified method for recording and posting all items.
3—Avoids the necessity of posting each item.
4—Requires the minimum amount of labor.

**This page is the customer's bill; the one underneath is your copy**

*Harton's Garage and Accounting Record is another new labor saving device we make. Ask about it.*

SEND FOR DESCRIPTIVE FOLDER AND FULL PARTICULARS

*Let Our Service Department Solve Your Bookkeeping Problem. We Gladly Give Advice Free.*

**THOMAS J. HARTON & CO., Inc.** Church & Worth Sts. NEW YORK

*Loose Leaf Specialists*

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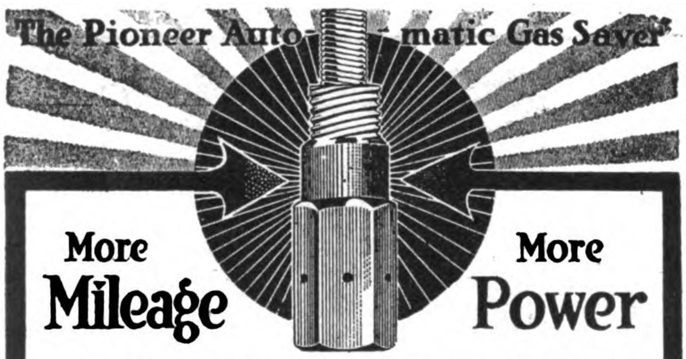
The Pioneer Auto-matic Gas Saver
More Mileage
More Power

# AEROFRAM Gas Saver

**The Simplest and Most Efficient of All Gas-Saving Devices—Effects a Notable Improvement in Engine Performance—Anybody Can Install It in Ten Minutes—For All Cars.**

***Absolutely Automatic—Nothing to Adjust***

**Dealers:** The Aerofram actually does the work that more expensive gas-savers claim to do. When you offer it to your customer you do so with the certainty that he cannot duplicate its efficiency with any other device at ten times the price. It will positively add two to six miles per gallon—in many cases more. Hundreds of users have testified to this. Write for details. Liberal selling terms.

***Price in Canada $1.50***

**$1 The Aerofram Co. $1**
**107 Massachusetts Avenue. Boston, Mass.**

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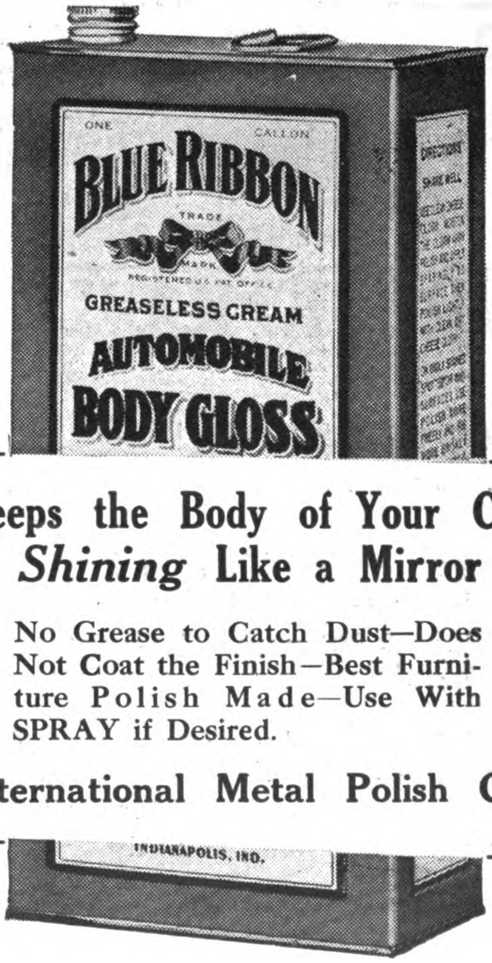


## Keeps the Body of Your Car *Shining* Like a Mirror

No Grease to Catch Dust—Does Not Coat the Finish—Best Furniture Polish Made—Use With SPRAY if Desired.

**International Metal Polish Co.**

# The Havoline Sign Means Sales

Are you cashing in on the selling value of the big, new, glistening Havoline sign? Nail it up and keep it up. It will move your stock of

## HAVOLINE OIL

REG. U.S. PAT. OFF.

*"It makes a difference"*

The Havoline sign ties up your establishment with the terrific Havoline Oil advertising smash that is sweeping the country with irresistible force.

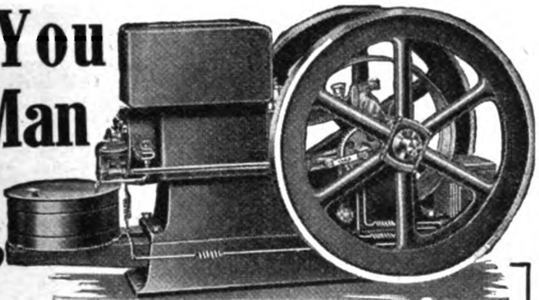
Every time you sell a can of Havoline you retard the depreciation and prolong the life of some owner's car. That's Service.

FIVE U.S. GALLONS NET.
HAVOLINE
OIL
"IT MAKES A DIFFERENCE"
MEDIUM
INDIAN REFINING CO.
NEW YORK CITY

**Indian Refining Company**, NEW YORK
Incorporated
*Producers and Refiners of Petroleum*

---

# Are You The Man We Want?



**You are** if you want a live-wire kerosene or gasoline engine proposition—a big-money maker. No red tape—no waiting for engines—no repair stock to carry.

## Meco ENGINES

**Gasoline, Kerosene & Gas** are medium-priced, high-grade engines that you can sell and build up a business with. One sells another. Kerosene engine cuts fuel cost 65 per cent as compared to gasoline.

### We Please You Or Refund Your Money

Get in quick. If your jobber does not handle MECOS, write for terms, prices. Good territory going fast. Don't wait.

**Manufacturers Engine Co.**
1890 Crystal Ave., Kansas City, Mo.

---

The elapsed time record er

## TIME-KEEPING METHODS

of a Garage or Service Station are never criticised if

THE CALCULAGRAPH

## The Elapsed Time Recorder

Is used to time the mechanics.

Accurate accounting methods bring increased business.

Run your repair department by clockwork and it will show a profit.

Send for free booklet W, illustrating a complete set of forms for a simple cost system for garages

**Calculagraph Company**
Dept. 76. 30 Church Street NEW YORK CITY

# BE UP TO DATE ON TIRE CARRIERS

**About all Cars now carry spare tires by strapless bands without tire chafing or touching anywhere**

**Mr. Ford Dealer:** The Ford users demand up-to-date crown fenders, etc., and they will not accept out-of-date makeshifts for Tire Carriers. More Sly-Perfect Cradle Type and Interchangeable carriers were sold in 1916 than all other kinds. The demand for 1917 caused most all jobbers to stock them.

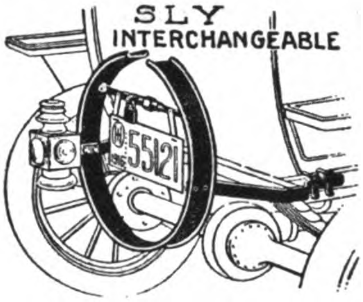
*Detroit, Mich., May 10th, 1917*

## Notice of Increase in List Prices of New Era "Better" Accessories.

*EFFECTIVE FROM THIS DATE TO AUGUST 1st*

## "SLY" PERFECT INTERCHANGEABLE

Quickly adjusted for all Ford and Chevrolet tires—or demountable rims. Combines place for lamp, number plate, lock and tire holding by expansion grip on inside of tire. Avoids all contact or chafing.



The ideal way of tire carrying—one size—does it all, including non-Skids.

Give owners a chance to buy the genuine patented "SLY" Tire Carrier, alongside cheaper ones and the Sly will outsell them—and make the dealer MORE profit.

For Ford Cars

Sly Interchangeable Rear Tire Carrier

| | |
|---|---|
| No. 150 Single | $4.50 |
| No. 252 Double | 6.00 |

For Chevrolet "490"

| | |
|---|---|
| No. 151 Special single | $4.50 |
| No. 253 Special double | 6.00 |

Pacific Coast Prices—$5.50-$7.00.

This Interchangeable Carrier solves the tire carrying problem on all Fords—even more than our "Cradle" Carrier—by one size adjusting for 30x3—3¼—or 31x4 casing—or, if on a demountable rim—and so tightly locking them on, by expansion, they can't be pried over the ½-inch raised edge.

**Similar to those on all modern small and large cars.** Quickly clamps to all Fords (including Sedan) or Chevrolet frame without drilling or bolting—a method proven by us through 2 years' use.

New Era "KORECT" Ford Rear Carrier.

Specially adaptable for Wire Wheels and Spranger Rims

| | |
|---|---|
| S-1 demountable, single | $5.50 |
| D-2 demountable, double | 6.50 |
| S-3 with carrying rim, single | 6.00 |
| D-4 with carrying rim, double | 7.50 |
| S-5 extra carrying rim | 1.50 |
| D-6 double outfits only | 1.50 |
| Foot Accelerators | $1.25 |

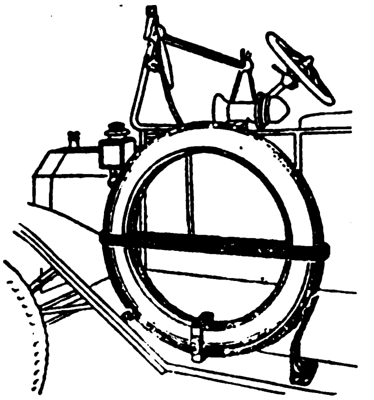
Twin Elliptic Shock Absorbers

| | |
|---|---|
| No. 1, weight of car, 2300 pounds | $15.00 |
| No. 2, weight of car, 3000 pounds | 15.00 |
| No. 3, weight of car, 3800 pounds | 16.00 |
| No. 4, weight of car, above 3800 pounds | 18.00 |

## TIRE CARRIERS
### Side or Running Board Type

Made of pressed steel, black enameled, forming a snug cradle for each tire, which avoids chafing it in spots as do those that are strapped on.

A thief-proof lock separately included.



Either tire can be removed in 10 seconds without disturbing the other, by merely unlocking.

The 1917 Sly Cradle Type Rear Carrier has a perfected method of attaching, giving stronger anchorage and neater, better finish. It is heavier, and a real, high-class carrier. FITTING—There is no drilling or cutting, clamps on in a few minutes.

**PRICES—Ford Carriers—Cradle Type.**

Sly Perfect Cradle Tire Carrier

| SINGLE REAR | | | DOUBLE REAR | | |
|---|---|---|---|---|---|
| 101 | 30x3¼ | $6.50 | 222 | 30x3¼ | $8.50 |
| 107 | 31x3½ | 6.80 | 226 | 31x3½ | 8.50 |
| 105 | 31x4 | 7.25 | 224 | 31x4 | 8.80 |
| **SINGLE SIDE** | | | **DOUBLE SIDE** | | |
| 102 | 30x3¼ | $4.50 | 223 | 30x3¼ | $6.50 |
| 108 | 31x3¼ | 4.80 | 227 | 31x3¼ | 6.50 |
| 106 | 31x4 | 5.00 | 225 | 31x4 | 7.00 |

Non-Skid Tires require one inch larger holder than marked tire sizes or instead 30-inch—order a 31x3-inch or 31x3¼-inch as wanted.

Instruction tags for attaching on every holder.

Note: Pacific Coast prices—add 50c single, 75c double.

Add 50c net for any carrier with offset brace for Wire Wheels.

All shipped in strong cardboard cartons, F. O. B. Chicago or Grand Rapids.

New Era "Perfect" Tire Locks

| | | | |
|---|---|---|---|
| Single | $1.25 | Double | $2.00 |

"Off-an-On" Tire Tool $1.25

**"Sly Perfect" Cradle Tire Carriers are also carried (both single and double) in all sizes up to 42x5. May be quickly attached to running board or by blacksmith, to rear of any car. Information and prices on request.**

*If your regular jobber doesn't catalog the Sly—order of us. Send us his name and we will bill through him—Prompt Service.*

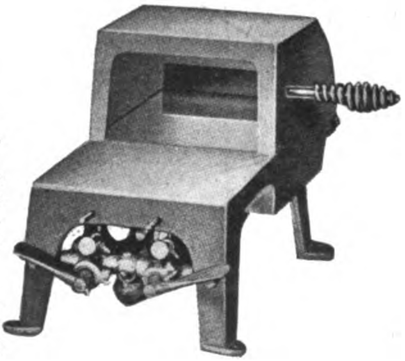
**NEW ERA SPRING AND SPECIALTY CO., 865A Woodward Ave., DETROIT, MICH.**

---

# Do Repair Jobs Quicker With a Johnson Gas Furnace

**The Johnson No. 101 Bench Furnace is the handiest gas appliance for heating soldering coppers, hatchet irons, for case-hardening, heating for tempering or annealing.**

**It is equipped with two powerful atmospheric burners that obtain instantly a heat of 1600 to 1800 degrees F, in the heating chamber.**

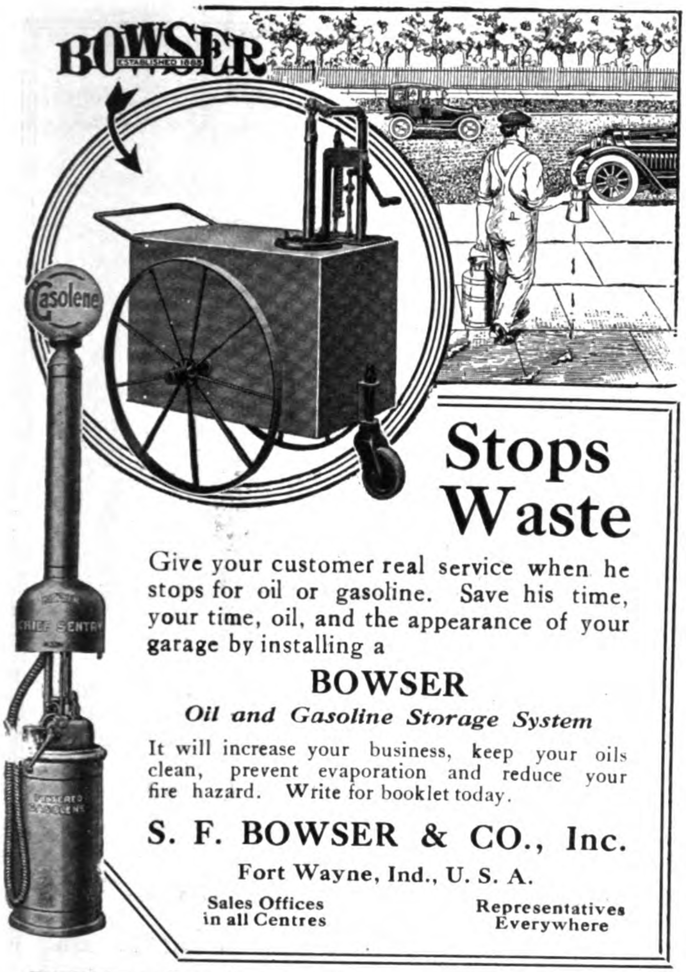


NO FORCED BLAST REQUIRED

**Takes the place of an expensive blast furnace. Perfect combustion is insured, regardless of the pressure or quality of the gas. There's no soot or dirt. No danger of decarbonization because of neutral flame.** Lights instantly from pilot. Uses either manufactured or natural gas.

**Unequalled for manufacturers as well as garages and repair shops. If your jobber cannot supply you, write us direct for No. 101 Johnson Furnace, or free illustrated literature.**

**Johnson Gas Appliance Co., - - Cedar Rapids, Iowa**



## Stops Waste

Give your customer real service when he stops for oil or gasoline. Save his time, your time, oil, and the appearance of your garage by installing a

**BOWSER**

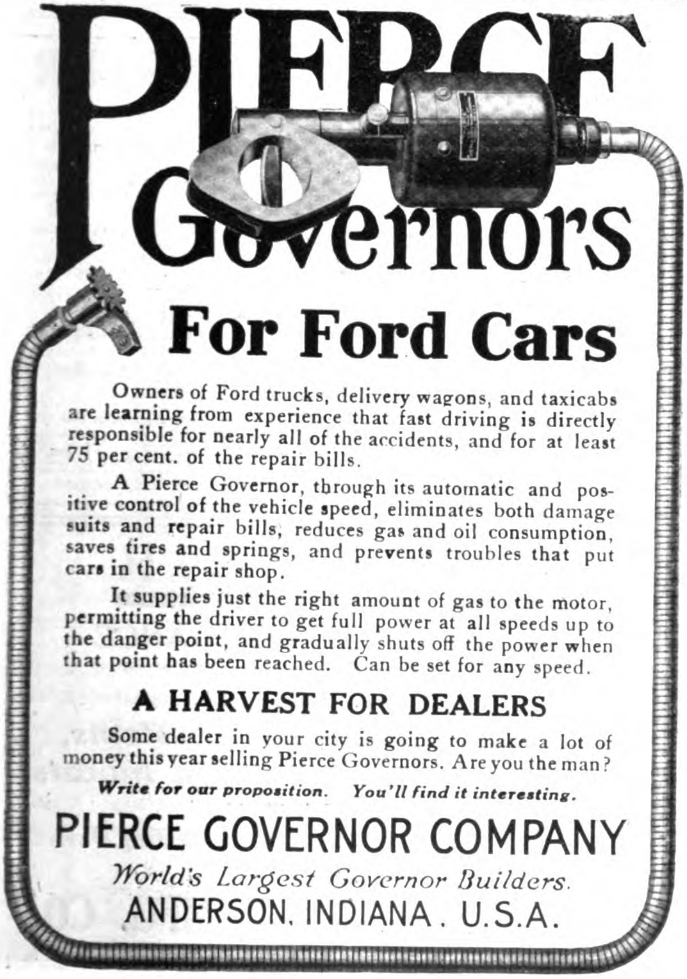
*Oil and Gasoline Storage System*

It will increase your business, keep your oils clean, prevent evaporation and reduce your fire hazard. Write for booklet today.

**S. F. BOWSER & CO., Inc.**
Fort Wayne, Ind., U. S. A.

Sales Offices in all Centres

Representatives Everywhere



# PIERCE Governors

## For Ford Cars

Owners of Ford trucks, delivery wagons, and taxicabs are learning from experience that fast driving is directly responsible for nearly all of the accidents, and for at least 75 per cent. of the repair bills.

A Pierce Governor, through its automatic and positive control of the vehicle speed, eliminates both damage suits and repair bills, reduces gas and oil consumption, saves tires and springs, and prevents troubles that put cars in the repair shop.

It supplies just the right amount of gas to the motor, permitting the driver to get full power at all speeds up to the danger point, and gradually shuts off the power when that point has been reached. Can be set for any speed.

### A HARVEST FOR DEALERS

Some dealer in your city is going to make a lot of money this year selling Pierce Governors. Are you the man?

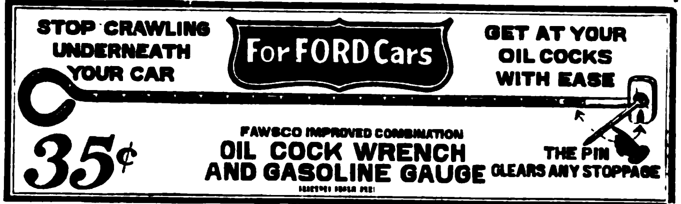
*Write for our proposition. You'll find it interesting.*

**PIERCE GOVERNOR COMPANY**
*World's Largest Governor Builders.*
ANDERSON, INDIANA, U.S.A.

## *Fawsco IMPROVED Combination*

## Gasoline Gauge

## Oil Cock Wrench and Cleaner



STOP CRAWLING UNDERNEATH YOUR CAR

For FORD Cars

GET AT YOUR OIL COCKS WITH EASE

35¢

FAWSCO IMPROVED COMBINATION OIL COCK WRENCH AND GASOLINE GAUGE

THE PIN CLEARS ANY STOPPAGE

*Large easel display card like above with each order.*

**Retails 35c Trade Doz. $2.80**

Packed 12 in Heavy Carton, with DISPLAY STAND FOR ONE—Balance in Envelopes.

**THE NECESSARY TOOL**

*Manufactured and Distributed by*

**J. H. FAW, Inc.**

41 Warren Street, N. Y. City Branch: Atlanta

*Our Literature on Request*

# NOW READY—FREE

## Limited Abridged Edition Offered Free

## "Story of the Automobile"

By H. L. BARBER, Economist and Financial Writer
Author "Making Money Make Money," etc.

**"STORY OF THE AUTOMOBILE" recites the history of the automobile's invention and comparative perfection from 1760 to 1917, tells how and why it became a commercial success, cites the benefits it has conferred, discusses the industry from all angles of finance, investment and future growth, gives figures of profits, gives a complete, up-to-date list of the pleasure and commercial cars made in the United States, with retail prices; includes chapter on "Amazing Figures of the Automobile Industry," by EDWARD G. WESTLAKE; another chapter entitled "Automobile, Accessories and Tire Manufacturers' Securities from the Investment Standpoint," by the BUSINESS BOURSE of New York. About 300 pages, illustrated with Charts and Comparative Tables, bound in Cloth, stamped in Gold, 8vo., $1.50. For sale by leading booksellers. Trade supplied by A. C. McClurg & Co., Chicago; Baker & Taylor, New York City, and leading wholesalers.**

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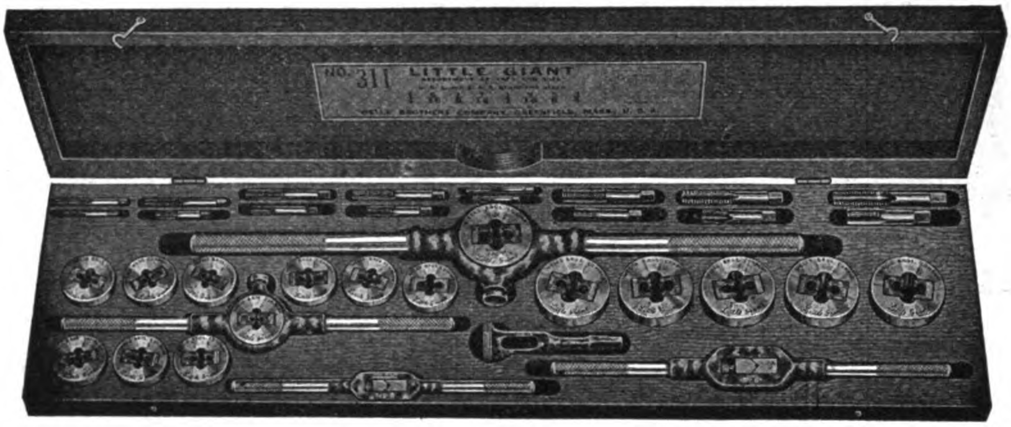
# Little Giant Combination Screw Plates

**Both United States and S. A. E. Standards**



These assortments are particularly valuable in the automobile repair shop where a considerable amount of threading is done. Each die is contained in its own collet and is adjusted to size. There is also a Bit Brace Die Holder for cleaning up battered threads in hard-to-get-at-places.

Every need of the manufacturer, the garage and repair man, or the car owner who makes his own repairs, for tap and die assortments can be supplied from our big line.

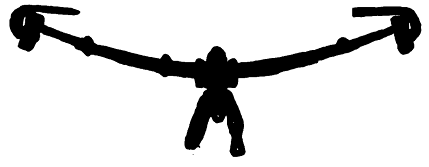
Send to-day for the circulars "Tools for the Automobile" "First aid in the up-keep of the Automobile."

**Greenfield Tap and Die Corporation, Greenfield, Mass.**

**New York Chicago Philadelphia Galt, Ontario**

# Olson Units

*for Fords* **$30.00**



*For 1000 lb. or 1500 lb. loads*

REVOLUTIONIZES the light delivery car field. OLSON UNITS relieve the Ford axle and differential of strain and stress. The auxiliary springs prevent side sway and end sagging when loaded and form full platform suspension which permits mounting of bodies with loading space seven feet back of the seat. Agents wanted.

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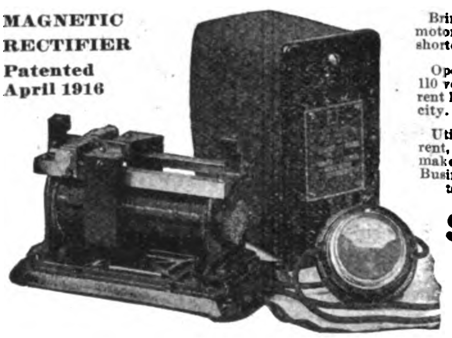
# F-F BATTERY BOOSTER

MAGNETIC
RECTIFIER
Patented
April 1916



Brings up the gravity of motor car storage batteries in the shortest possible time.

Operates from any convenient 110 volt 60 cycle alternating current lamp socket. 60 watt capacity.

Utilizes the Full Wave of current, has carbon electrodes and makes Recharging a profitable Business where batteries are taken in to charge

**$15 Complete**

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***Coils, Magnetos, Starting and Lighting Systems, High Tension Outfits and Motors***

**We Repair any Kind of an Electrical Heating Device**

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## *EXPERIENCE*

IS the great teacher. Use of tools and knowledge of their possibilities for economizing money, time and labor have convinced many thousand motorists that

## *BAY STATE*
## *Autokit Wrench Sets*

are the most satisfactory, most useful, and, measured by any other standard, the most efficient hand tools obtainable.

These sets are selected tools—sockets, socketed shanks and ratchet handles, with which work can be done on any part of a car, conveniently, easily, and with perfect results.

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**BAY STATE AUTOKIT NO. 3**

These sets are in three combinations:

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| **Set No. 1, 31 Sockets** | **$10.00** |
| **Set No. 2, 12 Sockets** | **7.50** |
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Absolutely guaranteed to the buyer.

***JOBBERS AND DEALERS:*** *Let us send you trade quotations and literature.*

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Sales Agent
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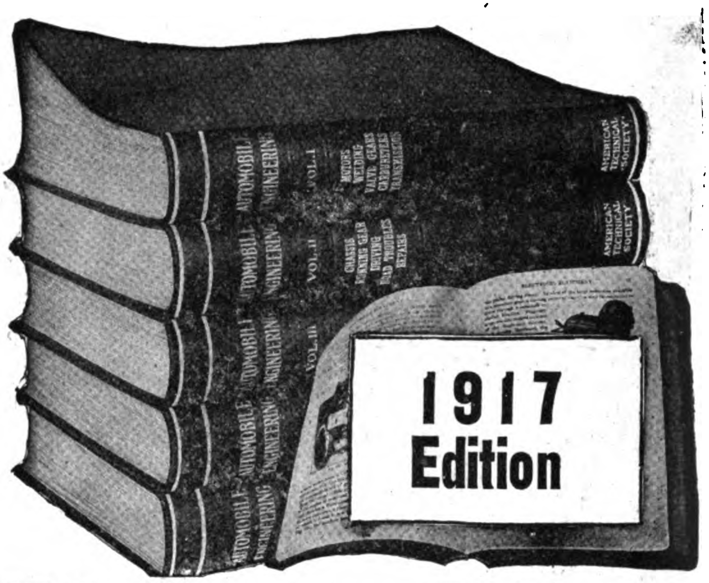

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Engineers and engine builders acknowledge that the EVER-TIGHT three-piece construction is the only proper construction for safety and prevention of leakage. Makes reboring of out-of-round cylinders absolutely unnecessary. Write us.

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**as a separate business department of your Garage. Business easy to get, grows steadily, and pays well; only small capital required and opportunity everywhere. For best work and surest profits use**

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***Used and recommended by 60 Leading Tire Companies***

***Send for booklet No. 12 and catalogue on complete outfits for every size garage.***

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"THE INIMITABLE BEARING"
DISTRIBUTORS IN EVERY CITY OF IMPORTANCE
the HESS-BRIGHT MANUFACTURING COMPANY
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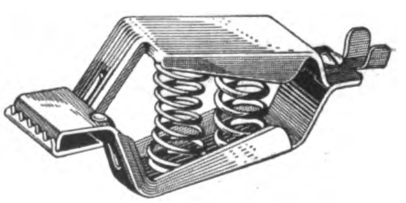
**Hook Up Your Batteries With Universal Battery Charging Clips**



They enable you to charge lighting and starting batteries without disconnecting them from the car.

**Made of steel—lead plated—may be used over and over again.**

**No. 21-A—1½" spread of jaws.**

Sample mailed postpaid for 15c in stamps.

**Single Lots, Each 20c** **Lots of 10, Each 15c** **Lots of 100, Each 12 1-2c**

**R. S. MUELLER & CO., 431 High Ave., S. E., Cleveland, Ohio.**

**THE MINIMUM IN DELIVERY COST**

**TON-A-FORD**
(Trade Mark—Foreign Rights Reserved)

**Extension Chassis, $345**

**F. O. B. RACINE**

**Combined with a Ford Chassis (new or old) makes a Powerful Ton-Truck, with Ton-and-a-Half capacity.**

**Dealers:** **Write for specifications and our agency proposition**

**TON-A-FORD TRUCK CO. 15th St., RACINE, WIS.**

**48 to 56 Horsepower—Only 3000 Pounds**

## IDEAL COMBINATION

**Mighty power with light weight, joined as only the Apperson Brothers know how—result, gliding movement at all speeds, wonderful comfort, unyielding endurance. Sixes and Eights.**

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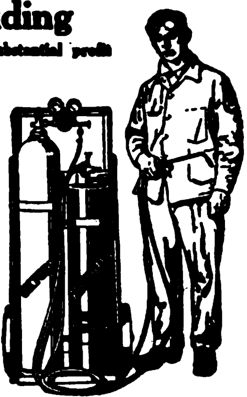
## Add to Garage Profits by Oxy-Acetylene Welding

**Savings made please your patrons and pay good substantial profit**



## PREST-O-LITE

**Dissolved Acetylene**
**(Ready-made carbide gas)**

adds to the efficiency and usefulness of any good welding equipment. We furnish thoroughly high grade welding apparatus for $75.00. (Canada $100.00). The average user will also need gas cylinders at an additional cost, and about $10.00 worth of welding supplies. Truck and special equipment for cutting operations at extra cost.

***Send for details of Prest-O-Lite Service for Oxy-Acetylene Welding.***

**The Prest-O-Lite Co., Inc.**

*World's Largest Makers of Dissolved Acetylene*

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Can. Gen. Office, Dept. 0.9, Toronto, Ont.

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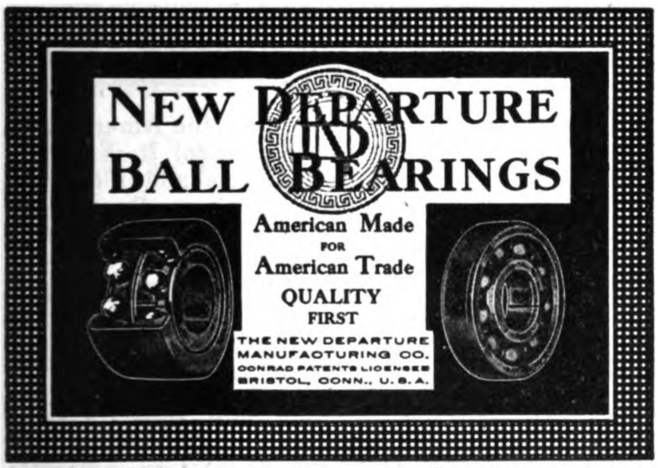

## NEW DEPARTURE BALL BEARINGS

American Made
FOR
American Trade
QUALITY
FIRST

THE NEW DEPARTURE MANUFACTURING CO.
CONRAD PATENTS LICENSEE
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WM. B. SCAIFE & SONS CO.
PITTSBURGH, PA.
BRAZED
AIR TANK

## SCAIFE COPPER-BRAZED AIR TANKS

are positively guaranteed to hold air indefinitely without loss of pressure.

**CAUTION**

Do not confuse Scaife Copper-Brazed Tanks with the cheap Welded or Soft-Soldered Tanks made by others.

We Also Manufacture
**SCAIFE GASOLINE STORAGE OUTFITS**

*Send for Catalogues.*

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# "NORMA" BALL BEARINGS

(Patented)

NORMA
"NORMA"

**If the bearings of your ignition apparatus or of your lighting generator fail, where is the advantage of an engine of surpassing quality or of a car of surpassing design? As determining the service capacity of your car, can any detail—how small soever—be considered of minor importance?**

**The almost universal use of "NORMA" Bearings in the high-grade magnetos and lighting generators used on cars of the better class, can have but one explanation, viz., the proved dependability of "NORMA" Bearings in this exacting high-speed service. You may safely take the presence of "NORMA" Bearings as a mark of quality in car and accessories.**

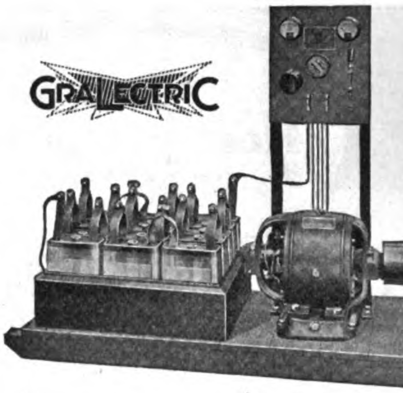
**Be *Sure*—See That Your Electrical Accessories Are "NORMA" Equipped**

NORMA
"NORMA"

**THE NORMA COMPANY OF AMERICA**
1790 BROADWAY NEW YORK
Ball, Roller, Thrust and Combination Bearings.

**$225.00**

## Individual Lighting Plants
### For Farm Homes
### A Line That Every Garage Man Should Handle



Plant consists of generator, switchboard and storage battery assembled complete and mounted on skids. Batteries are fully charged before shipment and customer can have light immediately after uncrating. No wiring to be done on plant—simply connect two wires from house wiring to back of switchboard.

Batteries guaranteed for five years.

The farmer uses his work engine to charge the storage batteries, which give him all the current he needs to light his house and barn for a week or more on one charge. Very inexpensive to maintain and can be taken care of by a boy or the hired girl.

This is a permanent, profitable business for every garageman and dealer in the country districts.

**Write for special proposition to Garage Men.**

**GRAY MOTOR CO., - - - - 435 Oakland Ave., Detroit, Mich.**

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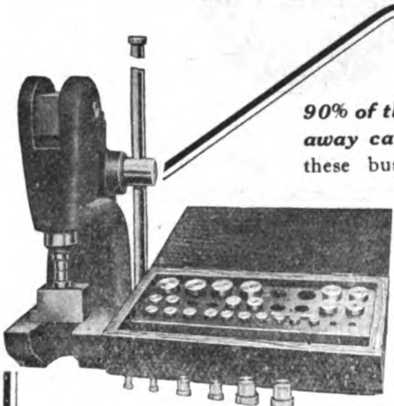
## Don't Junk Your Old Bushings!



Swedges in all sizes from 7-16" to 1 3-16"

*90% of the Bushings that have always been thrown away can be made better than when new!* After these bushings have been put through one of our Bushing Presses, the metal is closer-grained and the bushing fits tighter. *One fifth of the expense and labor in overhauling a car goes into the bushings.* With our Bushing Press you can take a set of six connecting rods, and in less than half an hour swedge and ream them to a perfect fit. These are better than new bushings, which would have cost at least ten dollars—pretty good pay for a half hour's work! The Beach Bushing Press saves all the cost of new stock; no delay from sending to the factory; no necessity to carry in stock a dozen different size bars of cored bronze. *Write us today!*

**BEACH PROCESS BUSHING PRESS**

**THE GREB COMPANY, 202 State Street, BOSTON, MASS.**

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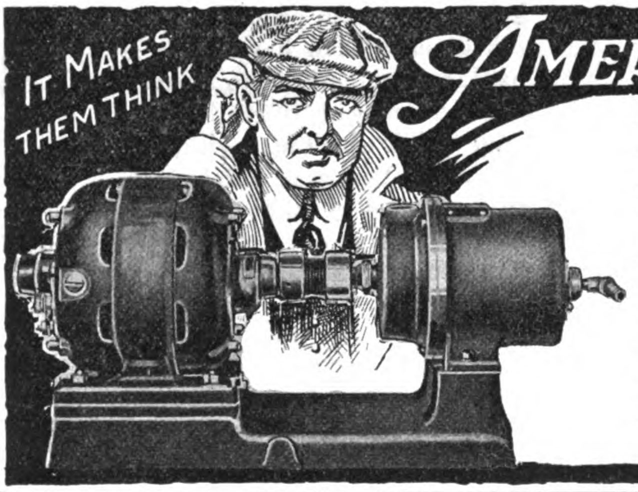
## American Electric Air Pump



EMPLOYING the **ROTARY** principle, the American Electric has these distinct advantages: It is the most compact, simple, durable, economical and efficient air pump made. It can be placed anywhere. Supplies air direct to the tires or can be coupled with a storage tank. Driven by direct or alternating current. Automatic lubrication. Dust and dirt proof. No packing used. Fully guaranteed.

*JOBBERS and DEALERS—We are offering special inducements to the trade. You can sell the American Electric and can swing the pump business in your territory. A proposition that once sold stays sold.*

**AMERICAN ELECTRIC AIR PUMP CO.,** 222 Penn Ave. PITTSBURGH, PA.

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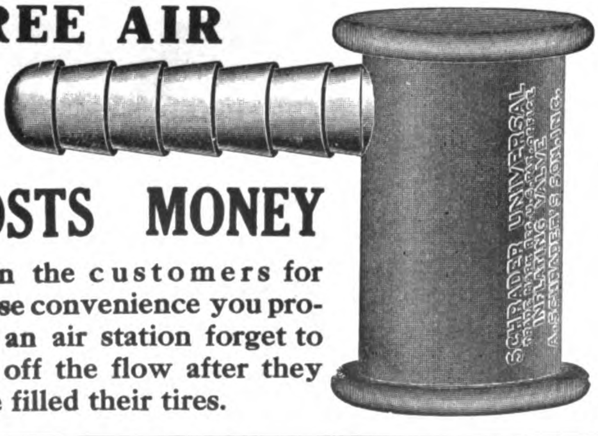
## FREE AIR

## COSTS MONEY



when the customers for whose convenience you provide an air station forget to turn off the flow after they have filled their tires.

Guard against this waste by attaching a

## Schrader Automatic Inflating Valve

to your air hose.

Thanks to this appliance your bottled air locks itself into the tank the minute it is taken off the tire-valve. You turn on the air by pressing the nozzle of the inflating valve against the tire-valve and you turn it off by removing the device from the tire-valve.

Made to fit any diameter of hose from 1-4 in. to 5-8 in.

**PRICE ONE DOLLAR**
in U. S. A.

*Manufactured by*

**A. SCHRADER'S SON, Inc.**
800 Atlantic Avenue, Brooklyn, N. Y.

*Schrader products were awarded a Grand Prize and two Gold Medals at the Panama Pacific International Exposition. "There's a reason."*

# WHAT YOU WANT - WHEN YOU WANT IT

That's the whole idea of Stevens Service Cabinets. Your stock is kept in a clean, orderly manner; but little floor space is occupied, and you can select your part at any time without inconvenience or delay. It also adds to the dignity and appearance of your place of business, and will pay for itself in time saved.

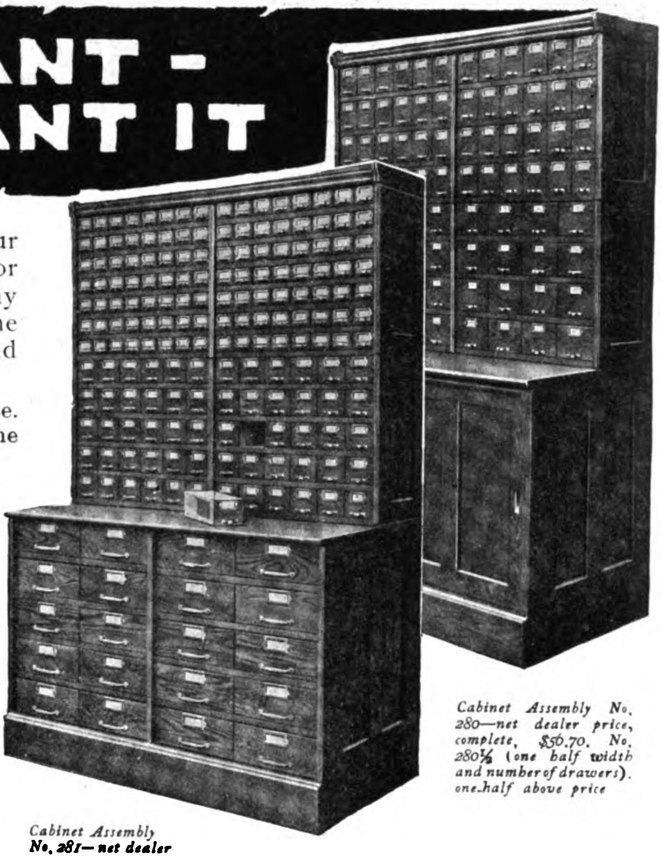
Our new unit construction builds up like a sectional bookcase. Any combination can be built up and added to from time to time as desired.

Stevens Service Cabinets have a frame of heavy oak with rich antique finish. Drawers have finished oak fronts with combination pull and card holder; they cannot stick as the sides and bottom are made of heavy galvanized steel. Cross divisions may also be obtained.

**Ask about our "Handy" Service Cabinet, which is particularly suited to Garage and Repair Shop needs. They are interchangeable and may be built up into sections of any size.**

**DEALER PRICE, $5.00**

Cabinets shown are designed for dealers and Garagemen, and prices are F. O. B. factory.



*Cabinet Assembly No. 280—net dealer price, complete, $56.70. No. 280½ (one half width and number of drawers), one-half above price*

*Cabinet Assembly No. 281—net dealer price, $84.00. No. 281½ (half width and number of drawers), half price.*

## STEVENS & COMPANY

**375 BROADWAY N. Y. CITY**

# $250 in Gold for the Best Slogan

## SLOGAN

We need a good advertising SLOGAN for VULCAN Springs and in order that you may successfully compete, we submit an outline of our policy and aspirations.

### 1. QUALITY

VULCAN Springs have and shall always carry the highest standard of quality—only the good endures.

### 2. SERVICE

VULCANS are today made in 588 different types, and in our five direct branches, we actually stock over 80,000 springs. Today good assorted stocks are available in over 1800 cities, and in a few years we propose to cover 8000 cities, showing well chosen stocks with reliable dealers.

### 3. FIT

We assume the high salaried engineers who design cars nowadays are on their mettle to produce the best designs. In every case our springs must be an exact duplicate of the spring intended to replace.

### 4. HONEST TRUTH

We confine our appeal to the merits of VULCAN Springs and it has always been and always shall be our endeavor to tell the absolute truth regarding the quality of our product and the extent of our service.

VULCAN Springs are as durable as the best grade of material and the most careful workmanship can make them. We mention this because good intent is a valuable consideration in the making of a slogan.

### 5. TO SUM UP

VULCAN SPRINGS must be immediately available to the man who needs one, and said man must be so impressed with the quality, fit and service, that he will come back for more. Our copyrighted trade mark shows on every Spring. Liberal discount to the trade. Now cut this out and send us a good slogan.

## RULES OF CONTEST

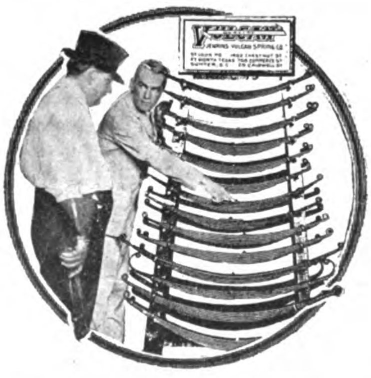
1. Contestant must be associated in some branch of the Automobile Industry, either as Dealer, Jobber, Repairer or Salesman of cars or accessories. Carriage and Wagon Makers and general Hardware and Sporting Goods trade not barred. Any employee of above concerns also eligible.
2. Slogan must be submitted on letter head of above named trades, and no writing within two inches of slogan. Contestant's name and address must be plainly written below.
2. If several contestants submit the same slogan, in case of acceptance, the full amount will be given to each. Contest closes July 15th.

## JENKINS VULCAN SPRING CO.

## ST. LOUIS, MO.

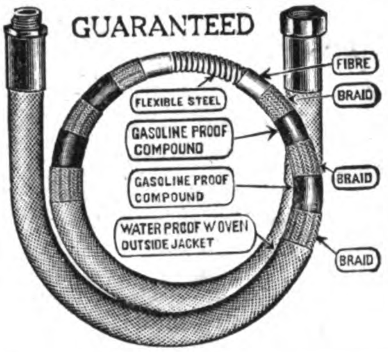
**Factory Branches Carrying Complete Stocks**

**St. Louis..... 1402 Chestnut Street**
**Minneapolis..1024 Hennepin Street**
**Reading, Pa....538 Franklin Street**
**Fort Worth..708 Commerce Street**
**Sumter, S. C....29 Caldwell Street**



779528

YOU · WANT · AND · NEED · EVERLASTING GASOLINE HOSE



Gasoline dissolves rubber and the best rubber hose made will last but a short time. Results—leaks, waste and repairs.

Everlasting Hose is made with a steel core covered with two plys of a gasoline proof compound, covered with a waterproof jacket. It is oil and dirt proof.

It is more flexible than rubber hose, it cannot break or leak and is guaranteed for one year.

There is no rubber to dissolve, to clog the gasoline line or carburetor. In use will not scratch nor mar the finish of the car.

It is made to fit any pump or tank. Sold in standard lengths 8, 10, 12, or 15 feet, but supplied in any length with couplings attached.

**LIST PRICES** } ¾" $1.00 a ft.—Coupling, hose or I. P. T. $1.50
1¼" $2.00 a ft.—Coupling, hose or I. P. T. $3.00

*Anti-drip nozzles furnished when desired.*

**CHICAGO TUBING AND BRAIDING CO.**
224 No. Clinton St. CHICAGO, ILL.

**Garford**
MOTOR TRUCKS

**Trucks of 1, 1½, 2, 3½, 5 and 6 ton capacity. 4½, 7 and 10 ton Tractors.**
**The Garford Road Builder.**

**THE GARFORD MOTOR TRUCK CO., Lima, Ohio.**

**Bunting Bearing Bronze** IN Cored Bars

BUNTING BEARING BRONZE

Bunting Bearing Metal is standard today with both Manufacturer and Repairman.

Is for sale by most any Jobber or can be purchased direct from us.

**STOCK SIZES**

| PIECE NO. | Outside Diameter | Inside Diameter | Length | Approximate weight |
|---|---|---|---|---|
| A | 1 | ½ | 12 | 2 |
| B | 1¼ | ½ | 12 | 3½ |
| C | 1½ | ¾ | 12 | 5 |
| D | 1¾ | ¾ | 12 | 7 |
| E | 2 | 1 | 12 | 8½ |
| F | 2¼ | 1¼ | 12 | 10 |
| G | 2½ | 1½ | 12 | 11½ |
| H | 2¾ | 1¾ | 12 | 12¾ |
| I | 3 | 2 | 12 | 13¾ |
| J | 3¼ | 2¼ | 12 | 15½ |
| K | 3½ | 2½ | 12 | 17 |
| L | 4 | 3 | 12 | 21 |
| M | 4¼ | 3¼ | 12 | 20 |

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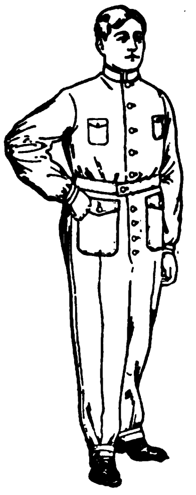
*Have us write or revise your Sales Letters.*

Ross-Gould, 1015K Olive Street, St. Louis

**Ross-Gould**
**Mailing**
**Lists St. Louis**

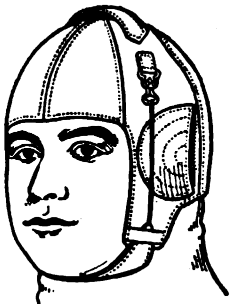
**One-Piece Suits**
**and Driving Hoods**



***We Letter Your Suits***

In a very attractive manner with Turkish red thread (which positively does not fade), the name of the Car, Tire or Oil that you handle, or in any other way you choose, at a very small additional cost.

We make a specialty of Racing Suits and Hoods



**SANDERS CO.**
218½ Indiana Ave.
INDIANAPOLIS, - IND.

Price $2.50 up. Made of heavy government khaki. Let us send you samples.

Price $1.50 up
Made of khaki, wools, serges and leather.

**SELL SULLIVAN TRUCKS**

**One of the few staple and practical trucks on the market.**

**Our selling policy and proposition is the most liberal ever offered to the trade.**

**One Model, 3,000 Lbs. Capacity**
**Chassis Price, $1,600**

***Write for complete details***

**SULLIVAN MOTOR CAR CO.**
**Rochester, New York**

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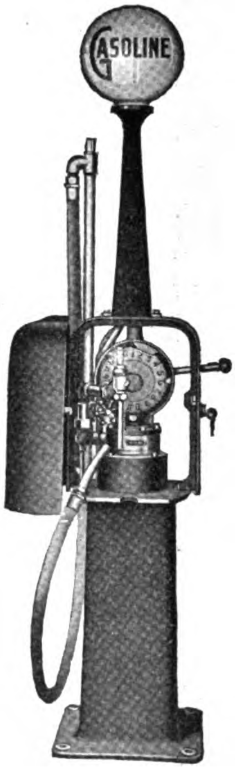
**Shotwell** NEVER MORE NEVER LESS
STANDARD OF ACCURACY

## Method of Handling Hazardous Liquids



KNOW that there is absolutely no waste; be sure of the accuracy and economy of your filling system; see that it's Shotwell. You will find in this new system distinct advantages over all other methods. Does away entirely with the old rack and pinion. Accuracy of measurement absolutely assured. Large contact surfaces completely enclosed and protected from dust. Volume can neither be increased nor decreased through negligence or design.

Storage systems and pumps for public garages, private garages, stores, factories, railroad, etc.; all embodying the features that make the Shotwell the standard of accuracy; never more, never less.

SHOTWELL
ACCESSIBLE FOOT VALVE

Located directly *above* the tank; not inside. Easy to get at through cast iron man-hole box which is part of equipment. Makes it easy to clean valves and intake screen; does away with old, troublesome and expensive method. An exclusive Shotwell feature.

## Let Us Tell You More of The Shotwell Method

We will be glad to go into this proposition in detail; to point out to you where Shotwell surpasses and tell you why it is the system for you.

*Prompt Deliveries.* *Write for Catalogue.*

**Shotwell Pump and Tank Company**
27 North Alabama Street
INDIANAPOLIS, INDIANA

**THE SCOUT**

This is the pump that should stand in front of your place as a symbol of accuracy.

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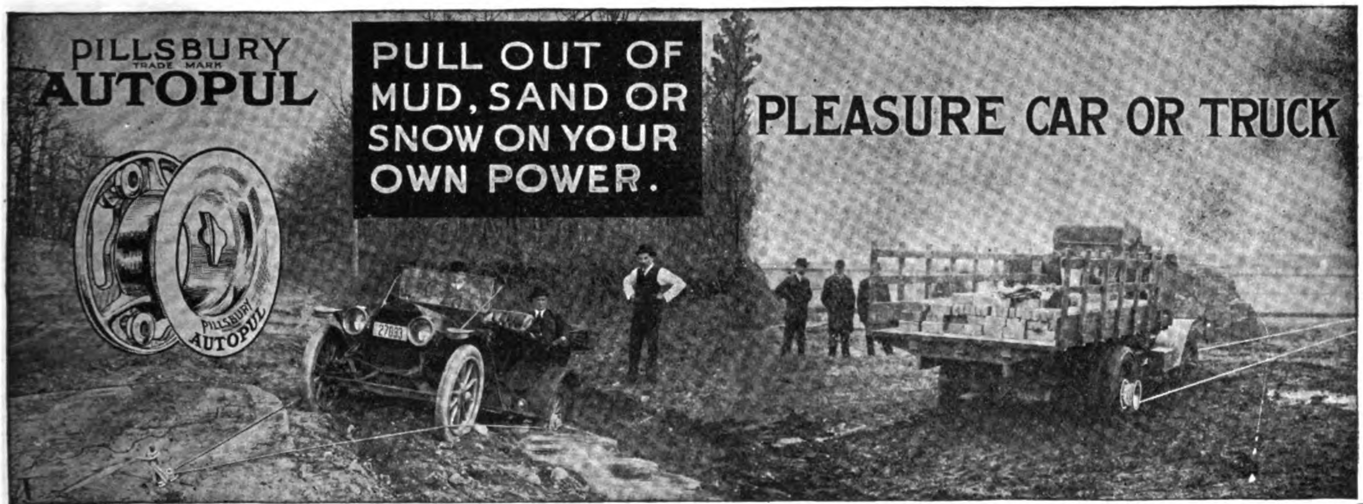


## All Highways are Passable—With a PILLSBURY AUTOPUL

An equipment, either permanent or quickly fitted to any car or truck, with which a ditched or bogged or tractionless vehicle can be drawn to a solid surface.
The outfit can be carried constantly, requires but small space and is very light. Machines can be drawn forward or back as is necessary by their own power.

*LIST PRICE, COMPLETE FITTINGS*

| | |
|---|---|
| Automobile Size, Japanned | $8 |
| Automobile Size, Nickeled | $13 |
| Truck Size, Japanned | $8 to $35 |

Indispensable for any truck, an ideal touring equipment, PILLSBURY AUTOPUL is a practical utility and an economy.
It consists of two winding drums, two special cable hooks and locking bolts and nuts. Stakes and cable furnished as extras, the cable or rope in lengths to meet any requirement.

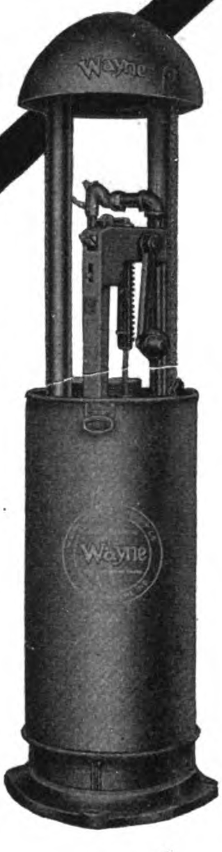
**PILLSBURY HUBPUL** For Ford and model 490 Chevrolet cars—a combination Hup-Cap, Wheel Puller and Auto Capstan, consisting of two hub drums, two spoke hooks and wheel puller cap screw.

| | |
|---|---|
| Complete Set, Japanned | $4 |
| Complete Set, Nickeled | $6 |

*All quotations f. o. b. Minneapolis, Minn.*
*DEALERS AND JOBBERS: We have a big sales proposition for you. Write for it today.*

**PILLSBURY MANUFACTURING COMPANY, Minneapolis, Minn.**

# SELL YOUR LUBRICATING OIL AT THE CURB!



Where every Gasoline Buyer—every Autoist—can see and get it Accurately, Quickly and Cleanly.

YOU LOSE TRADE, PROFIT AND OIL if you handle your lubricating oil inside your garage, store or filling station.

**This New Wayne Honest Measure Curb Lubricating Oil Pump and Underground Tank**

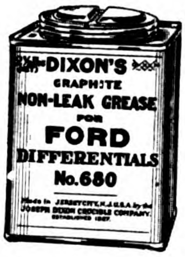
is a handsome quart, pint and half-pint device which fairly shouts to every passing autoist: "Here's the place to buy Clean Oil, Quickly, and Get Every Drop You Pay For."

*YOUR TRADE NEED NOT DRIVE IN.*
*YOU NEED NOT CARRY IT OUT.*

Spillage, Time, Steps and Trouble are eliminated!
Your Selling Cost is Reduced—Your Profit Increased.

*A CARD WITH YOUR NAME AND ADDRESS WILL BRING COMPLETE INFORMATION AND PRICES WITHOUT OBLIGATION.*

**WAYNE OIL TANK & PUMP CO.**
510 CANAL STREET, FORT WAYNE, IND.



**Have You Ordered**
A SUPPLY OF THE
2½ LB. PACKAGES OF
**DIXON'S**
NON-LEAK
**Grease No. 680**
Especially prepared for use in Ford differentials?

DIXON'S
GRAPHITE
Automobile
LUBRICANTS

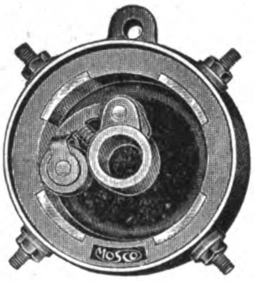
No. 680 contains just the proper amount of Dixon's selected flake graphite thoroughly mixed with a special adhesive lubricant. It does not work out of the axles on to the brake bands.

Ask for booklet 49-G and dealer's proposition.

Made in Jersey City, N. J., by the

**eph Dixon Crucible Company**

Established 1827



MOSCO
TRADE MARK

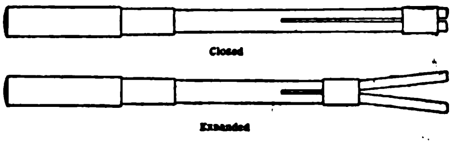
## Timer For Ford Car

Extra heavy pressed steel shell, aluminum finish. Insulating ring of gray bone fibre.

Terminals insulated all the way through. One-hand, self-closing oiler. Pressed steel arm and compression spring on brush assembly. Brush assembly sold separately. Interesting prices. Immediate delivery.

***MOTOR SPECIALTIES CO.***
*MANUFACTURERS*
*WALTHAM MASS.*

# Jiffy Bushing Extractor for FORDS



Closed

Expanded

(Patented)

Removes

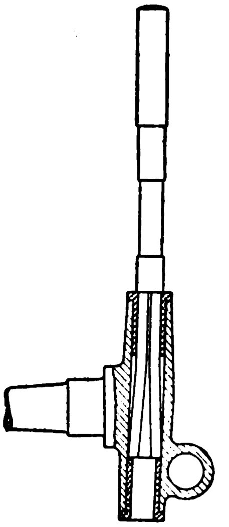
| | |
|---|---|
| Steering Knuckle<br>Spindle Arm<br>Spindle | BUSHINGS in a JIFFY |

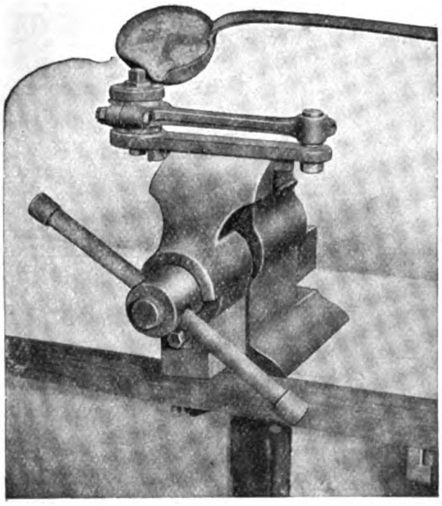
Made of Tool Steel and nicely finished.

Indispensable to the repairman or the owner who does his own work.

When removing Steering Knuckle Bushings it is not necessary to remove wheel.

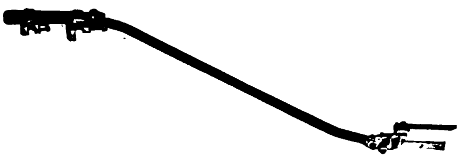
Pays for itself in a few minutes.





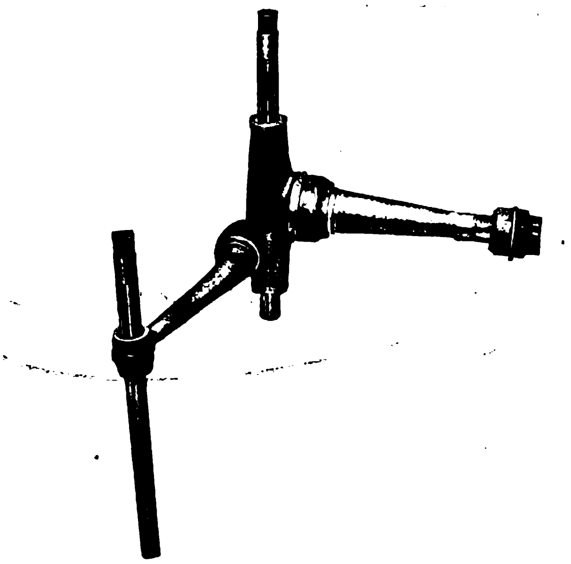
## RE-BABBITTING JIG

For Ford connecting rod bearings saves the cost on one job.



## DYER TOWING DEVICE

Saves the time of one man. Positively steers rear car. Attached in one minute



## DUPLEX REAMER

For Ford steering knuckle, spindle and spindle arm bushings.

## Light Weight Piston for FORDS

Weight 1 Lb. Less Than Standard Ford

Manufactured to the Limit of 2 Ounces Variation in Weight

The DYER Lightweight Piston in your customer's FORD will greatly

**INCREASE** the speed!

**INCREASE** the acceleration!

**DECREASE** the crankshaft, wrist pin connecting rod, piston and cylinder wear!

**DECREASE** the vibration of the car; the gasoline and oil consumption!

**DECREASE** the chances of a knock in the motor!

WRITE FOR GENERAL CATALOGUE

## THE G. H. DYER COMPANY, - - - Cambridge, Mass.

Do You Know How Large a Profit

Little Giant

Convert-a-Car

Offers the Dealer?

For Immediate Delivery

If you don't know exactly how large a profit the Little Giant Convert-a-Car offers, you ought to send the coupon in immediately.

Your own best interests counsel immediate action, because:

This Ford truck unit is built by makers of the heavy duty Little Giant line of trucks, whose long and honorable history is positive proof that this unit is sturdy and efficient beyond expectation.

Its mechanical construction can't be beaten. Our engineers have definitely made it oversize and super-strong.

For instance, the wheels are 34"x3½" heavy artillery type, second growth hickory; the rear axle is 2 5/16"x2 5/16" solid forged high grade carbon steel.

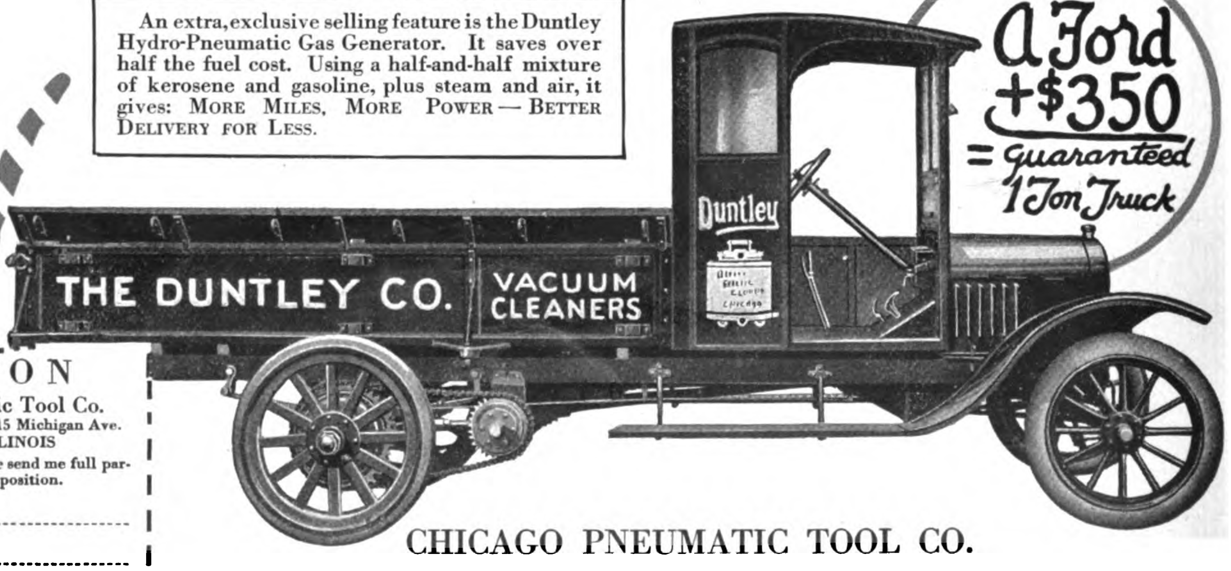
There is no need to argue that this is *real* truck construction. The specifications prove it. And this Little Giant hauling strength is given with Ford economy. That means *low-cost hauling certainty.*

The great prestige of the Little Giant name, and of its makers — the $14,000,000 Chicago Pneumatic Tool Co.—the guaranteed immediate deliveries; all point to a large increase in Convert-a-Car business through local dealers.

Our new selling plan gives the dealer a white man's chance. You'll like our business methods. You'll like our provision for small investment, speedy sales, astonishing rapidity of turnover. And the Little Giant line is complete—Convert-a-Car, 1-ton, 2-ton, 3½-ton.

Don't miss this opportunity. Write at once for our dealer's proposition. The corner coupon makes it easy. Don't delay!

An extra, exclusive selling feature is the Duntley Hydro-Pneumatic Gas Generator. It saves over half the fuel cost. Using a half-and-half mixture of kerosene and gasoline, plus steam and air, it gives: MORE MILES, MORE POWER — BETTER DELIVERY FOR LESS.



COUPON

Chicago Pneumatic Tool Co.
621 Little Giant Bldg., 1615 Michigan Ave.
CHICAGO, ILLINOIS

Without obligation, please send me full particulars of your dealer's proposition.

Name ........................................
Street ........................................
City ........................ State ..........

CHICAGO PNEUMATIC TOOL CO.

621 Little Giant Building 1615 Michigan Avenue, Chicago

# The TRUCKMOBILE

# and YOU—

The truck attachment idea is admittedly the sensation of the automobile industry. Its growth in the few short years of its existence has been without equal. Dealers, who only a few months ago scoffed at the idea of representing a truck attachment, today are selling hundreds of them.

This is your opportunity to do the same. But in selecting a truck attachment dealership you want, above all, to represent the one that is biggest in actual construction, biggest in correctness of design and engineering, biggest in performance, biggest in consumer value, biggest in dealer profits—in every way

## "Biggest of them all!"

From among the many big points of superiority of the TRUCKMOBILE we list these four— unique to the TRUCKMOBILE—which make it stand out above all others:

**$350**

**And a Ford Chassis**
**(Old or New)**

**Makes a Guaranteed 1½ Ton Truck for Every Purpose**

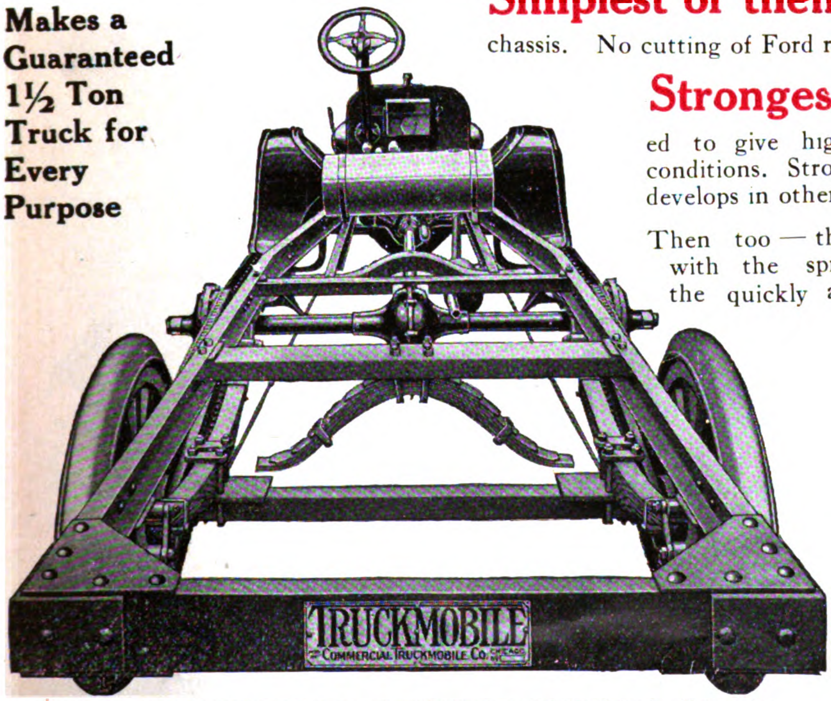
**Widest of them all**—6 to 9 inches wider frame than any other gives added stability and sturdiness and eliminates the sideway with its drag on the motor and wear on bearings.

**Longest of them all**—133 inch wheel base permits greater loading capacity and makes it easiest riding and easiest steering of them all.

**Simplest of them all**—Fewer parts and less of dealer's time spent in attaching to Ford chassis. No cutting of Ford rear axle or housing necessary.

**Strongest of them all**—Massively, though simply, constructed to give highest degree of service under any and all conditions. Strongly reinforced at every point where weakness develops in others.

Then too — the exclusive method of spring suspension with the springs interposed between frame and axle, the quickly attached bell sprocket. Add to this the fact that the TRUCKMOBILE is the greatest value for the money—most economical of them all in tire and gasoline mileage, cost of operation and upkeep. All these things make it **Best for the dealer to sell because it is Best for the User to buy.** Write today for attractive dealer's proposition.



**Rear view of the TRUCKMOBILE, showing TRUCKMOBILE attached to Ford chassis. Note massive construction, heavy reinforcement of frame and position of spring interposed between frame and axle.**

**Commercial Truckmobile Co.**
**360 Truckmobile Bldg.**
**Chicago, Ill.**

# Biggest of them all!

# *Wilmo Manifold*

# Helps Your Customers Fight High Cost of Gasoline

By actual official tests the Wilmo Manifold gets 34c worth of mileage—and more—from 22c worth of gasoline—whatever the grade.

Think what a real service you can be to your customers by showing how to get the most out of their gasoline the Wilmo Manifold way.

Think what a big talking point that means to you in Wilmo Manifold sales—together with Wilmo simplicity. The Wilmo is attached in a few minutes with a monkey-wrench—then on for good—without need of further watching.

The diagram below shows how the Wilmo Manifold completely vaporizes gasoline and virtually eliminates carbon. So scientifically simple that a mere schoolboy can understand it.

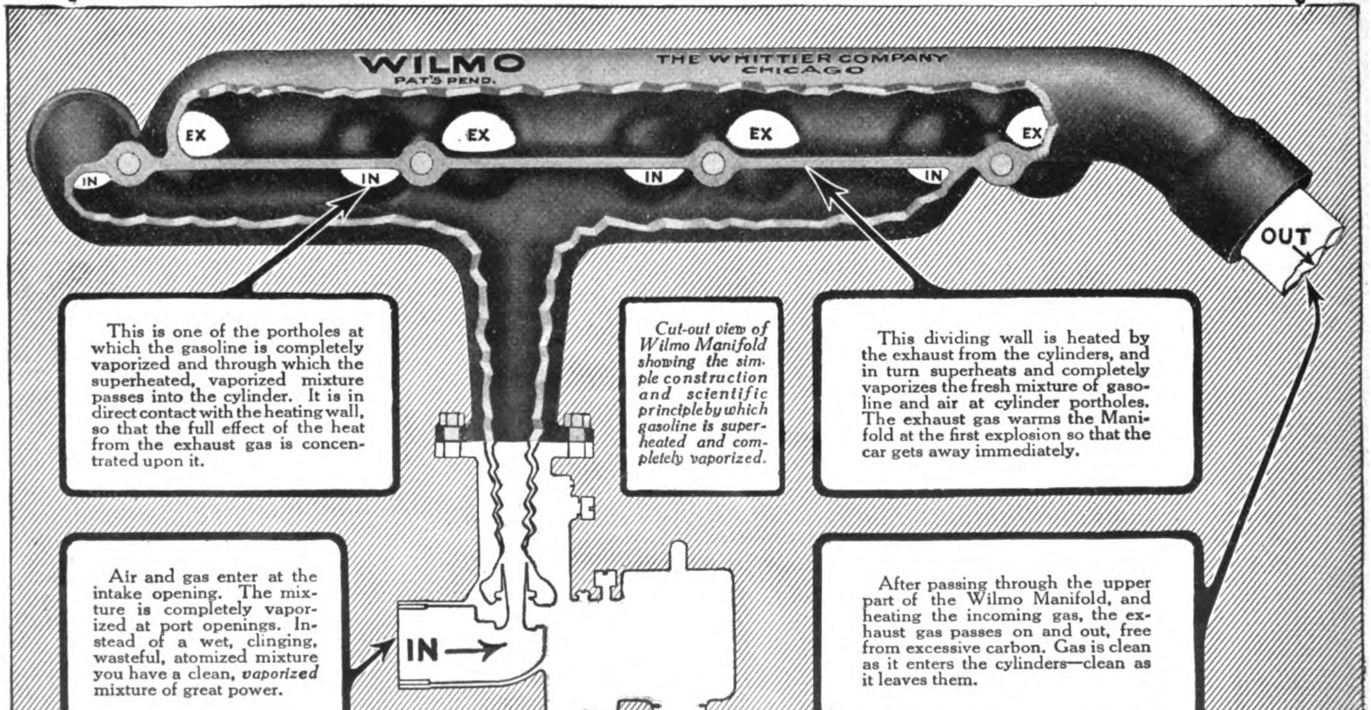
Sales are now in the hundred thousands and going strong, helped by advertising in national publications.

The Wilmo Manifold retails at $7.50 to $15, according to make of car. It stays sold, and continues to advertise you and your service tc customers.

Write for interesting test data, testimonials from users telling of many more miles to the gallon, and for helpful selling facts. For here's a year 'round seller that means business and more business—for you.

**THE WHITTIER COMPANY**
**First National Bank Building Dept. 236 Chicago, Illinois**

## How the Wilmo Manifold Increases Gasoline Mileage 42% to 54%



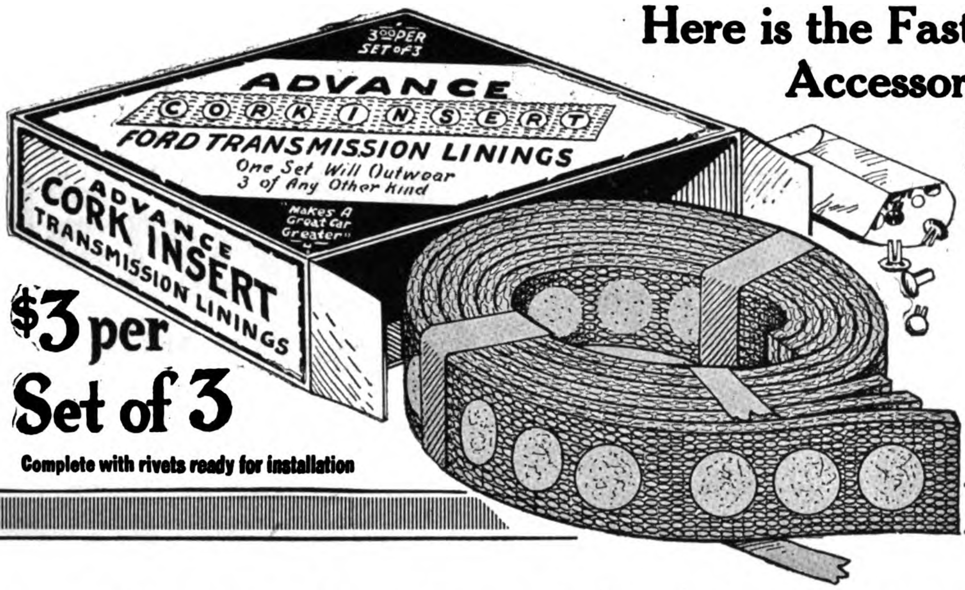
This is one of the portholes at which the gasoline is completely vaporized and through which the superheated, vaporized mixture passes into the cylinder. It is in direct contact with the heating wall, so that the full effect of the heat from the exhaust gas is concentrated upon it.

*Cut-out view of Wilmo Manifold showing the simple construction and scientific principle by which gasoline is superheated and completely vaporized.*

This dividing wall is heated by the exhaust from the cylinders, and in turn superheats and completely vaporizes the fresh mixture of gasoline and air at cylinder portholes. The exhaust gas warms the Manifold at the first explosion so that the car gets away immediately.

Air and gas enter at the intake opening. The mixture is completely vaporized at port openings. Instead of a wet, clinging, wasteful, atomized mixture you have a clean, *vaporized* mixture of great power.

After passing through the upper part of the Wilmo Manifold, and heating the incoming gas, the exhaust gas passes on and out, free from excessive carbon. Gas is clean as it enters the cylinders—clean as it leaves them.


3 00 PER SET of 3
ADVANCE
CORK INSERT
FORD TRANSMISSION LININGS
One Set Will Outwear 3 of Any Other Kind
"Makes A Great Car Greater"
ADVANCE CORK INSERT TRANSMISSION LININGS

**Here is the Fastest-Selling Accessory of 1917, Dealers!**

**$3 per Set of 3**

**Complete with rivets ready for installation**

# They Make the Ford Brake BRAKE

YOU know how the Ford jumps when it starts, and jerks when it stops — how it shivers and jars every time the brake goes on. Here is something that puts velvety smoothness in the Ford Transmission, so that it goes into low or reverse like a high-priced car. It starts gliding to a quiet stop at the first touch of the toe on the brake. No more clatter, no more jar — regular big car stuff.

**ADVANCE**

**CORK INSERT**

TRADE MARK REG. COPYRIGHTED 1917

**TRANSMISSION LININGS FOR FORDS**

***They STOP the Grabbing and Slipping***

Into expensive, imported transmission fabric are inserted circular pieces of cork, slightly thicker than the fabric itself. These cork surfaces engage the brake drums immediately when the pedals are pressed, due to the high coefficient of friction of cork and steel. **Ordinary transmission fabric becomes glossy and hard** and does not grip unless an excessive amount of pressure is brought to bear. Then it suddenly grabs and slips—and that's what causes the jars and the mechanism-killing vibration.

The corks in Cork Insert Linings eliminate the slipping, the jarring, the vibration, of starting and stopping. They also add wonderfully to the life of the linings. The corks wear very slowly—never become hard or glazed—hold their place in the fabric throughout the long wear and do their work to the very last.

**Advance Automobile Accessories Corp.**
**Dept. G3-1 56 E. Randolph St., Chicago**

That's why Cork Inserts outlast two to three sets of ordinary linings.

## Get Cork Inserts Now

Cork Inserts are being advertised to your trade in the Saturday Evening Post and leading trade papers. They are selling by the thousands. Your customers know about them and are ready to buy as soon as you are prepared to sell them. It's harvest time right now.

Cork Inserts are sold in handsome two-color packages, complete with rivets for installation. Use the coupon and send your order today for Cork Inserts. Your Jobber will get full credit.

## ORDER A DOZEN SETS

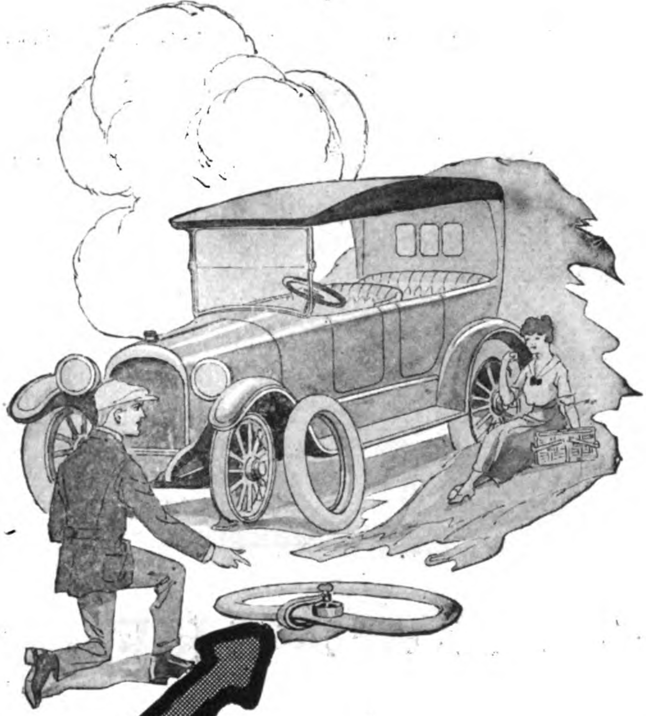
**ADVANCE AUTOMOBILE ACCESSORIES CORPORATION,**
**Dept. G3-1, 56 E. Randolph Street, Chicago**

Express one dozen sets of Advance Cork Insert Transmission Linings for Fords, subject to regular dealers' discount.

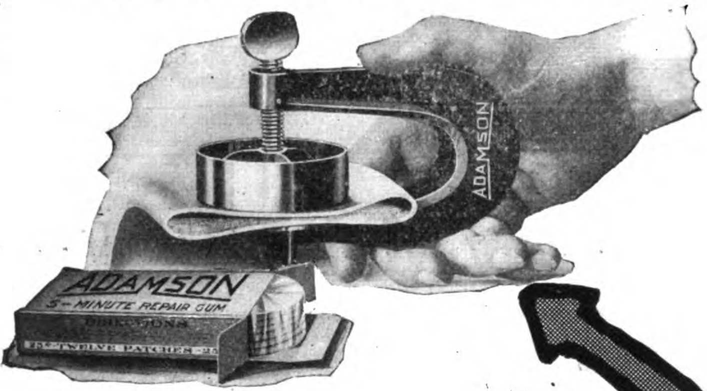
Name..............................................................

City.............................................. State....................

Jobber's Name..............................................................



THE NEW
ADAMSON
MODEL "E"
5-MINUTE VULCANIZER



**The Complete Line**

For larger tube injuries, tire and tube blowouts, tread cuts, etc., the "Adamson" line is complete with various outfits.

Prices range from $1.50 for Model "M" for tube repairs only, to $12.00 for Model "S" for tire and tube repairs and private garage and repair shop use.

The New
ADAMSON
VULCANIZER

These folders furnished free to "Adamson" Dealers. Order a supply for your customers.

A light and handy outfit for the quick repair of tube punctures. Makes repairing a pleasure.

Uses common gasoline—the most convenient and dependable fuel. Will vulcanize your tubes **anywhere** in five minutes.

Built on the same proven principles that have made "Adamson" Vulcanizers the most practical and largest selling line in the World.

Complete with box of a dozen "Adamson" 5-Minute Repair Gum Patches for $1.00. Extra box of 12 patches only 25c.

**Dealers:**

**This outfit is a tremendous seller.
Order now from your jobber.**

**Adamson Manufacturing Company
East Palestine, Ohio**

# Reason—

Should influence your decision in the selection of your Spark Plug Stock—***There are many good reasons why***

# MASTER

# Calorite Spark Plugs

**should be your selection—**

**Their design is in accord with the best automobile engineering demands and practices—**

**They are sturdily constructed of the finest materials obtainable.**

They are tested under rigid inspection rules—

They are generously guaranteed thus—

## OUR LIBERAL GUARANTEE

**[" We guarantee Master Calorite Spark Plugs against all defects of material or workmanship and will replace free of charge any Calorite insulators broken by heat which are returned to us transportation prepaid."]**

And in their resale you derive a margin of profit which justifies your whole hearted recommendation of these plugs to your customers for—**Long lived, dependable spark plug service.**

There is a Master Calorite Spark Plug for every variety of service—

And the retail price is amply justified by their efficiency and durability—

## $1.00 and $1.25 Retail

***depending upon the size***

Let us send you full details regarding our proposition to the trade. You will find it most attractive.

MASTER
M'F'D. BY
HARTFORD MACHINE
SCREW CO.

*Master Calorite Spark Plug*
*Regular Length, $1.00 each*

**MASTER CALORITE SPARK PLUGS**

**Made in U. S. A. and guaranteed by**

## Hartford Machine Screw Company

**502 Capitol Avenue** **HARTFORD, CONN.**

**(When Writing to Advertisers, Please Mention the Accessory and Garage Journal.)**

# Prest-O-Lite SERVICE

## In Indianapolis

INDIANAPOLIS—one of the great automobile centers of the world—home of Prest-O-Lite, has a big Prest-O-Lite Factory Branch right in the heart of its extensive retail and wholesale automobile district.

This Branch, with its complete facilities and expert organization, is handling a large volume of battery business—helping to solve the battery problems of manufacturers, distributors, dealers and car owners in its territory.

It is a sales depot and service headquarters for the Prest-O-Lite Storage Battery—insuring *factory service* to all customers.

Prest-O-Lite SERVICE
THE PREST-O-LITE COMPANY, Inc.

*Views above show (top right) front of Prest-O-Lite Indianapolis Branch, 510 N. Capitol Avenue; (top left) Offices of Branch. Lower illustrations give two views of the battery testing, recharging and repair departments.*

## Battery Business Brings Extra Profits to Dealers and Service Garages

TWO million automobiles now in service are equipped with storage batteries for starting, lighting and ignition.

These millions of car owners are constantly demanding new batteries and battery service, because batteries, like tires, need periodical inspection and attention, and in time wear out, necessitating the purchase of a new battery.

This means an enormous volume of business which dealers, garages and service stations are in a position to share. Many have installed special service station equipment to provide complete facilities for the repair and recharging of batteries.

Right in your own locality—wherever automobiles are used—there is growing demand for new batteries and battery service. Put yourself in position to profit by this big demand. The first step is to get full details on the Prest-O-Lite proposition for dealers and learn how our co-operative plan will create more profits for you with very little invested.

The Prest-O-Lite Co., Inc.

U. S. Main Office and Factory, 908 Speedway, Indianapolis.
Canadian General Office and Factory, Toronto, Ontario.

***The Prest-O-Lite Battery is a better battery--backed by a better service***

# MAXFER

## MEANS ECONOMY
## ECONOMY MEANS SUCCESS

## Maxfer Carries—Ford Pulls

THIS advertisement has been written by our dealers—every line and illustration has come from their suggestions. The Maxfer makes a Ford, used or new, into a Maxfer Truck in less time than any other device invented.

It seems impossible that a dealer will take on an agency for any other truck maker except the *MAXFER*, for the reason that all of them—except the Maxfer—require special machine tools and skilled mechanics to convert a Ford, used or new, into a ton truck.

The Maxfer makes a Ford, used or new, into a Maxfer one-ton truck (guaranteed overload 50 per cent) at a cost of $350 and a Ford. One mechanic and a helper can make this conversion inside of 3 hours. The only tools used are illustrated on the right hand side of this page.

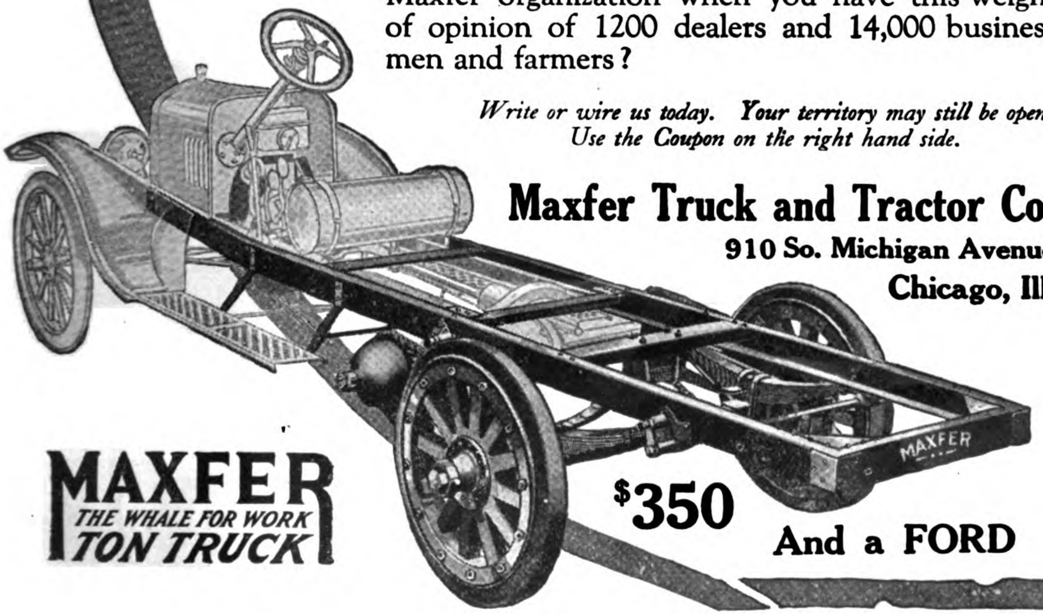
The Maxfer slips around and over the Ford, strengthening it all the way. The Ford frame is not cut off. The Ford axle is not cut off. You are only required to remove the rear wheels and the rear spring of the Ford car and then the Maxfer slips over and around the Ford frame, making the Maxfer ton truck.

1200 Dealers have realized this economy. 14,000 Business men and Farmers have realized this economy.

Can you, as **a** dealer, reading this advertisement, stay out of the Maxfer organization when you have this weight of opinion of 1200 dealers and 14,000 business men and farmers?

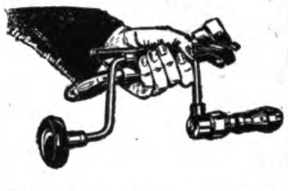
*Write or wire us today. Your territory may still be open. Use the Coupon on the right hand side.*

**Maxfer Truck and Tractor Co.**
**910 So. Michigan Avenue**
**Chicago, Ill.**

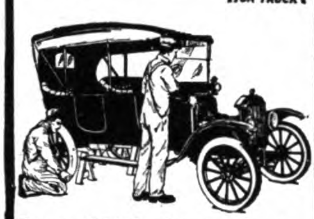


**$350 And a FORD**

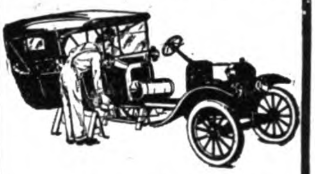
**MAXFER**
*THE WHALE FOR WORK*
*TON TRUCK*



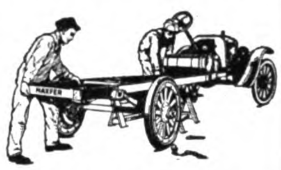
Tools used to make a MAXFER



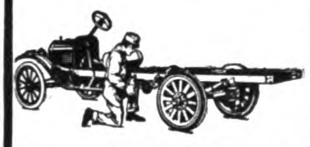
Removing Ford rear wheels



Taking off the body



Making a MAXFER one ton truck



Putting on MAXFER Bell sprocket

**Maxfer Truck & Tractor Co.**
**910 So. Michigan Ave.**
**Chicago, Ill.**

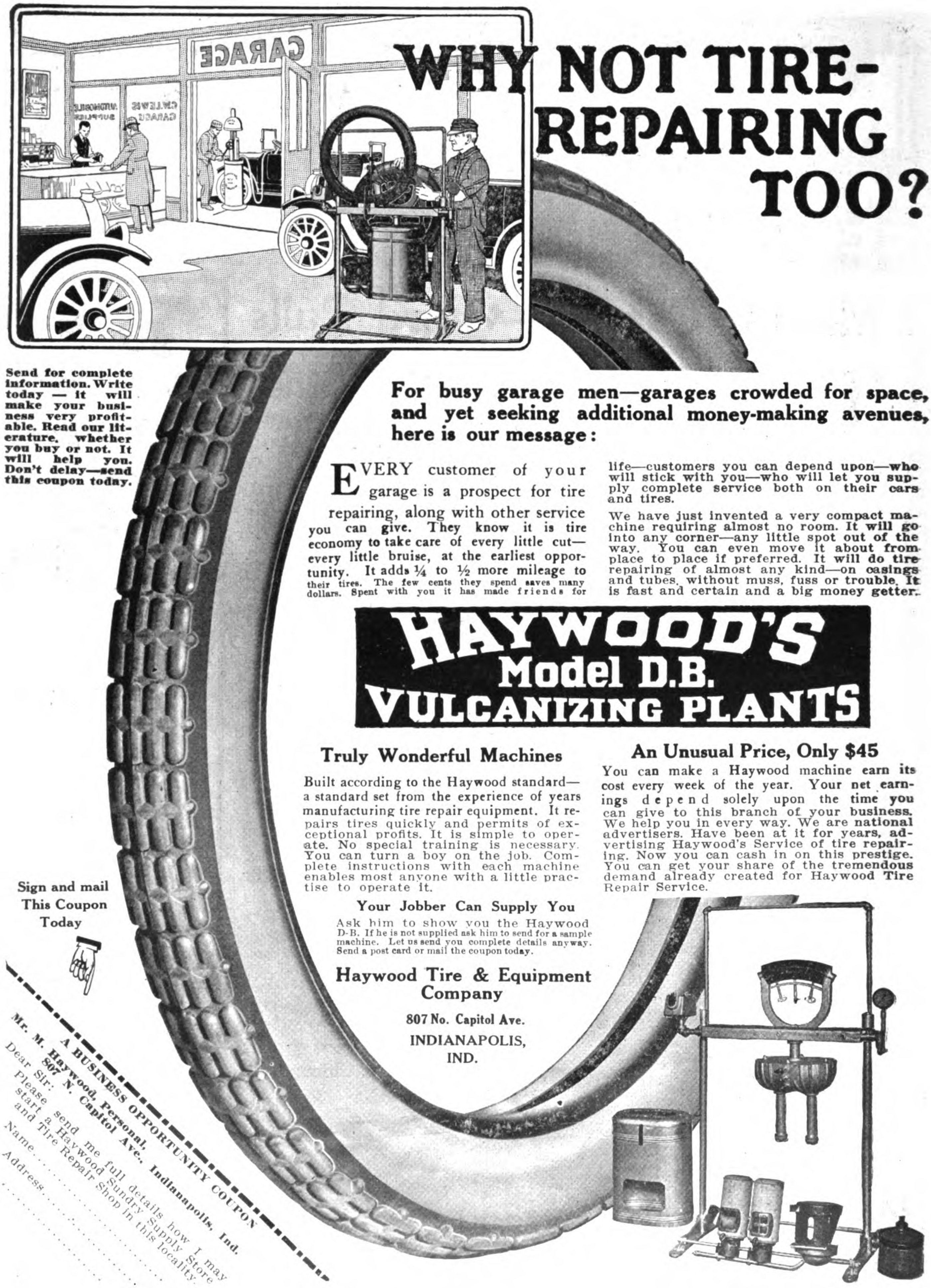
Please mail me full particulars regarding Maxfer Truck.

Name ..............................

Address ..............................

City ................ State ..........

AGJ6-17



# WHY NOT TIRE-REPAIRING TOO?

**Send for complete information. Write today — it will make your business very profitable. Read our literature, whether you buy or not. It will help you. Don't delay—send this coupon today.**

**For busy garage men—garages crowded for space, and yet seeking additional money-making avenues, here is our message:**

EVERY customer of your garage is a prospect for tire repairing, along with other service you can give. They know it is tire economy to take care of every little cut—every little bruise, at the earliest opportunity. It adds ¼ to ½ more mileage to their tires. The few cents they spend saves many dollars. Spent with you it has made friends for life—customers you can depend upon—who will stick with you—who will let you supply complete service both on their cars and tires.

We have just invented a very compact machine requiring almost no room. It will go into any corner—any little spot out of the way. You can even move it about from place to place if preferred. It will do tire repairing of almost any kind—on casings and tubes, without muss, fuss or trouble. It is fast and certain and a big money getter.

## HAYWOOD'S Model D.B. VULCANIZING PLANTS

### Truly Wonderful Machines

Built according to the Haywood standard—a standard set from the experience of years manufacturing tire repair equipment. It repairs tires quickly and permits of exceptional profits. It is simple to operate. No special training is necessary. You can turn a boy on the job. Complete instructions with each machine enables most anyone with a little practise to operate it.

### Your Jobber Can Supply You

Ask him to show you the Haywood D-B. If he is not supplied ask him to send for a sample machine. Let us send you complete details anyway. Send a post card or mail the coupon today.

**Haywood Tire & Equipment Company**

807 No. Capitol Ave.
INDIANAPOLIS,
IND.

### An Unusual Price, Only $45

You can make a Haywood machine earn its cost every week of the year. Your net earnings depend solely upon the time you can give to this branch of your business. We help you in every way. We are national advertisers. Have been at it for years, advertising Haywood's Service of tire repairing. Now you can cash in on this prestige. You can get your share of the tremendous demand already created for Haywood Tire Repair Service.

Sign and mail
This Coupon
Today

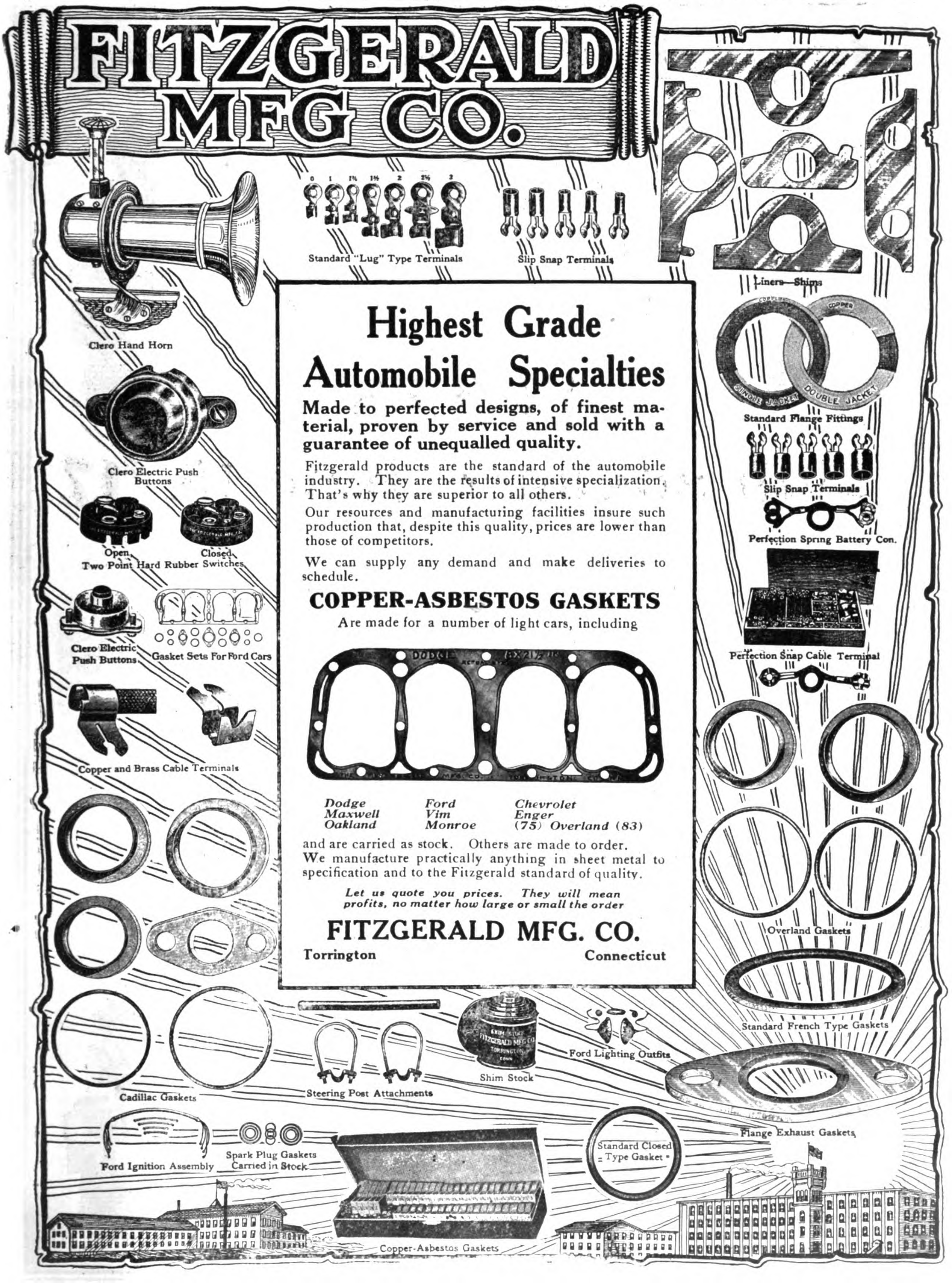
**A BUSINESS OPPORTUNITY COUPON**

**Mr. M. Haywood, Personal, Indianapolis, Ind.**
**807 N. Capitol Ave.**

Dear Sir:
Please send me full details how I may start a Haywood Sundry Supply Store and Tire Repair Shop in this locality.

Name..............................
Address..............................

(When Writing to Advertisers, Please Mention the Accessory and Garage Journal.)


FITZGERALD MFG CO.
0 1 1¼ 1½ 2 2½ 3
Standard "Lug" Type Terminals
Slip Snap Terminals
Liners—Shims
Clero Hand Horn
Clero Electric Push Buttons
Open
Closed
Two Point Hard Rubber Switches
Clero Electric Push Buttons
Gasket Sets For Ford Cars
Copper and Brass Cable Terminals
SINGLE JACKET
DOUBLE JACKET
COPPER
Standard Flange Fittings
Slip Snap Terminals
Perfection Spring Battery Con.
Perfection Snap Cable Terminal
Overland Gaskets
Standard French Type Gaskets
Cadillac Gaskets
Steering Post Attachments
Shim Stock
FITZGERALD MFG CO. TORRINGTON CONN.
Ford Lighting Outfits
Flange Exhaust Gaskets
Ford Ignition Assembly
Spark Plug Gaskets Carried in Stock
Standard Closed Type Gasket
Copper-Asbestos Gaskets
DODGE

# Highest Grade Automobile Specialties

**Made to perfected designs, of finest material, proven by service and sold with a guarantee of unequalled quality.**

Fitzgerald products are the standard of the automobile industry. They are the results of intensive specialization. That's why they are superior to all others.

Our resources and manufacturing facilities insure such production that, despite this quality, prices are lower than those of competitors.

We can supply any demand and make deliveries to schedule.

## COPPER-ASBESTOS GASKETS

Are made for a number of light cars, including

| | | |
|---|---|---|
| *Dodge* | *Ford* | *Chevrolet* |
| *Maxwell* | *Vim* | *Enger* |
| *Oakland* | *Monroe* | *(75) Overland (83)* |

and are carried as stock. Others are made to order. We manufacture practically anything in sheet metal to specification and to the Fitzgerald standard of quality.

*Let us quote you prices. They will mean profits, no matter how large or small the order*

**FITZGERALD MFG. CO.**

**Torrington Connecticut**

# Important Announcement

# A C

# PRICES

# Will advance June 15, '17

We ask the dealers to remember the fact that prices of A C Spark Plugs have never been advanced. We have stood all increased costs ourselves.

Although A C Plugs have already been adopted by 80 of the best pleasure car and truck manufacturers, we are determined to make a still Better Plug and to do this, means adding to our already rising costs.

A new schedule will, therefore, become effective June 15th.

The latest A C Plugs are better.
A C business means volume.
A C profits are substantial.

Every dealer should carry a full line of A C Plugs because the majority of cars carry them, because they are standard, in demand and make satisfied customers.

We take this opportunity to thank the dealers for the
splendid co-operation they have given us.

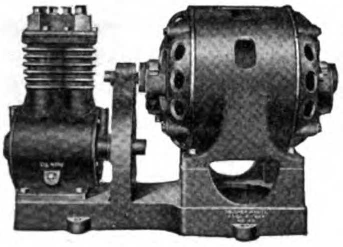
**CHAMPION IGNITION CO., Flint, Mich.**

A The Standard Spark Plug of America C

AC
TITAN
AC
TITAN
AC
CICO
AC
CICO
AC
CICO
AC
TITAN

Along the roads macadamized
The Motorist who is Brunner-wised—
Speeds smooth-with danger minimized
Because his tires are Brunner-ized—

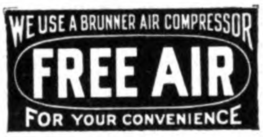
**THE pleasures of motoring are enhanced and the dangers are minimized when tires are properly inflated—smooth rides with danger of blow-outs lessened are insured by Brunner Service—and that is why the Brunnerwise Motorist patronizes the garage displaying the Brunner sign.**



Ever since the garage business has been a business the Brunner Air Compressor has been consistently demonstrating its sterling worth to the garageman—**in the garage.** Year after year the demand for Brunner Air Compressor Equipment has been doubling over, simply because the Brunner Air Compressor has always stood up and given satisfactory service. The motorist who patronizes the garage displaying the Brunner Sign always finds an ample supply of clean, cool air at the proper pressure to inflate his tires correctly at his disposal.

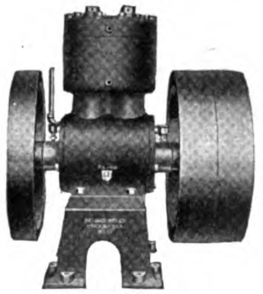
## THE BRUNNER SIGN ATTRACTS THE TRADE OF THE BRUNNERWISE MOTORIST

Because he knows that the garage displaying the Brunner Sign is always prepared to render him prompt and efficient compressed air service—he knows that when he pulls up under the Brunner Sign he never has to drive away disappointed.


WE USE A BRUNNER AIR COMPRESSOR
FREE AIR
FOR YOUR CONVENIENCE

He realizes that clean, cool air, such as he always finds at his disposal under the Brunner Sign, will increase his tire mileage and will reduce the dangers of motoring to a minimum. That is why the trade of the Brunnerwise Motorist follows the Brunner sign.

## The Safe Way Is the Brunner Way



The Brunner Air Compressor has always proven true to the Jobber who sells it—the Garageman who buys it—and the Motorist who uses it—are you Brunnerwise?

The Garageman who buys Brunner Equipment is never disappointed, for the reason that it has never been necessary to resort to misleading advertising claims in order to bolster up the sale of Brunner Equipment, and the garageman purchasing Brunner Equipment always receives just what he expects and "a little bit more."

## INVESTIGATE THE BRUNNER AIR COMPRESSOR

Be honest with yourself and investigate the garage air compressor question thoroughly before deciding on your new equipment. The Brunner will stand investigating and the more thorough the investigation the more certain will be your decision in favor of Brunner Service, because it not only insures compressed air efficiency of the very highest order, but it also insures that very desirable and liberal patronage of the Brunnerwise Motorist, which follows the Brunner Sign.

We will be glad to send you the name of the Brunner Jobber who covers your town, also our catalogue and Garageman's Handbook on Compressed Air—a book which every garageman should read carefully. They are all free for the asking.

## BRUNNER MANUFACTURING COMPANY

**Main Office and Plant:**
**UTICA,**
**N. Y.**

**Cincinnati Branch:**
**Cincinnati, Ohio.**

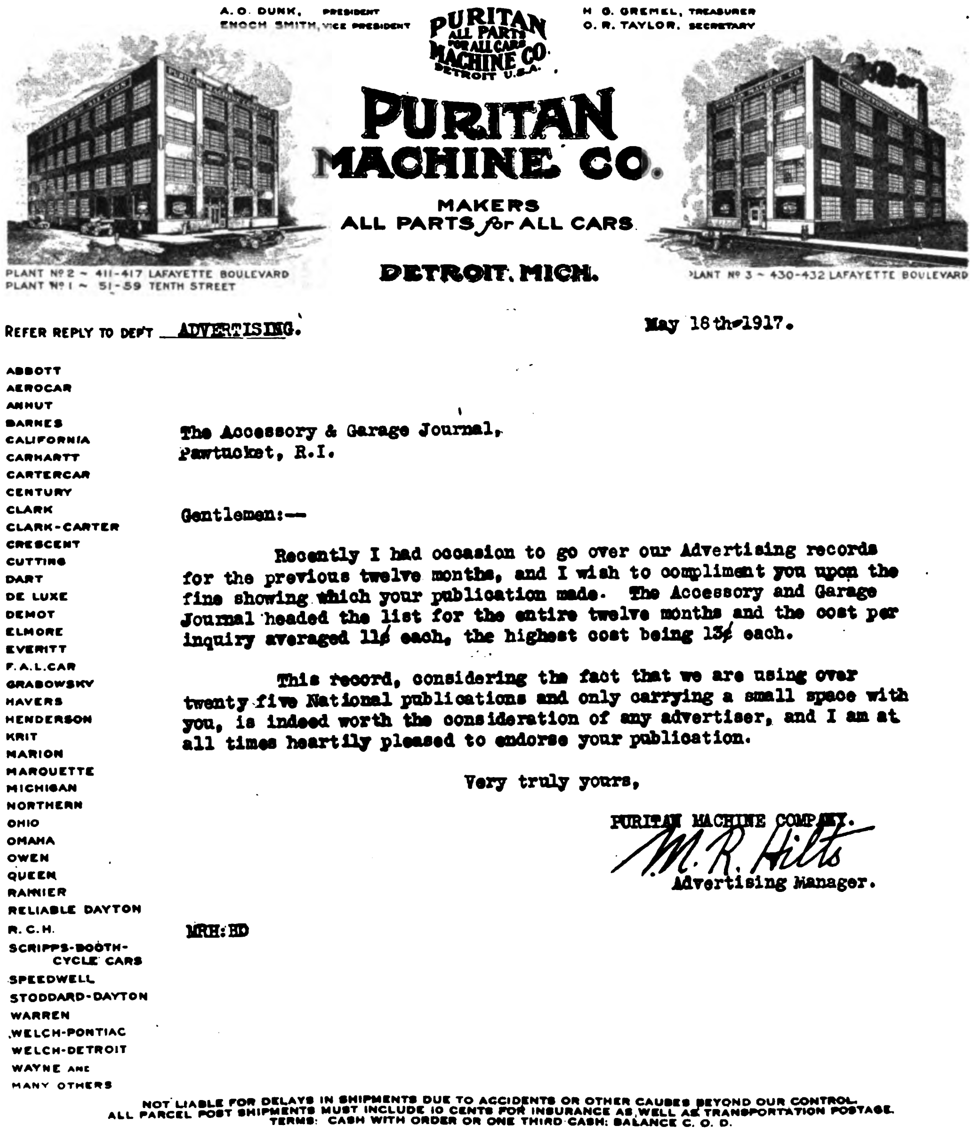
# COST OF INQUIRIES IS THE ACID TEST OF ADVERTISING

*Lowest Inquiry Cost, to an Advertiser in More Than 25 National Publications, for a Period of 12 Months, Shown by the*

# ACCESSORY AND GARAGE JOURNAL

The advertiser's records are basis for judgment. These are results that obtain from experience sufficient to justify a satisfactory conclusion. Nothing could be more convincing than the statement of the concern that places all publications at parity and with a uniform method of obtaining results, rates them on the actual productiveness.

This is what the ACCESSORY AND GARAGE JOURNAL has done:



A. O. DUNK, PRESIDENT
ENOCH SMITH, VICE PRESIDENT

PURITAN ALL PARTS FOR ALL CARS MACHINE CO. DETROIT U.S.A.

H. G. GREMEL, TREASURER
O. R. TAYLOR, SECRETARY

**PURITAN MACHINE CO.**

MAKERS
ALL PARTS for ALL CARS

**DETROIT, MICH.**

PLANT No 2 ~ 411-417 LAFAYETTE BOULEVARD
PLANT No 1 ~ 51-59 TENTH STREET

PLANT No 3 ~ 430-432 LAFAYETTE BOULEVARD

REFER REPLY TO DEP'T ADVERTISING.

May 18th 1917.

ABBOTT
AEROCAR
ANHUT
BARNES
CALIFORNIA
CARHARTT
CARTERCAR
CENTURY
CLARK
CLARK-CARTER
CRESCENT
CUTTING
DART
DE LUXE
DEMOT
ELMORE
EVERITT
F.A.L.CAR
GRABOWSKY
HAVERS
HENDERSON
KRIT
MARION
MARQUETTE
MICHIGAN
NORTHERN
OHIO
OMAHA
OWEN
QUEEN
RAINIER
RELIABLE DAYTON
R. C. H.
SCRIPPS-BOOTH-CYCLE CARS
SPEEDWELL
STODDARD-DAYTON
WARREN
WELCH-PONTIAC
WELCH-DETROIT
WAYNE AND
MANY OTHERS

The Accessory & Garage Journal,
Pawtucket, R.I.

Gentlemen:—

Recently I had occasion to go over our Advertising records for the previous twelve months, and I wish to compliment you upon the fine showing which your publication made. The Accessory and Garage Journal headed the list for the entire twelve months and the cost per inquiry averaged 11¢ each, the highest cost being 13¢ each.

This record, considering the fact that we are using over twenty five National publications and only carrying a small space with you, is indeed worth the consideration of any advertiser, and I am at all times heartily pleased to endorse your publication.

Very truly yours,

PURITAN MACHINE COMPANY.
M. R. Hilts
Advertising Manager.

MRH:HD

NOT LIABLE FOR DELAYS IN SHIPMENTS DUE TO ACCIDENTS OR OTHER CAUSES BEYOND OUR CONTROL.
ALL PARCEL POST SHIPMENTS MUST INCLUDE 10 CENTS FOR INSURANCE AS WELL AS TRANSPORTATION POSTAGE.
TERMS: CASH WITH ORDER OR ONE THIRD CASH: BALANCE C. O. D.

The service is alike for all. It has been developed for you. Measured by any standard the ACCESSORY AND GARAGE JOURNAL is distinctly the leading publication of the industry.

Its resources and service department are at your command.

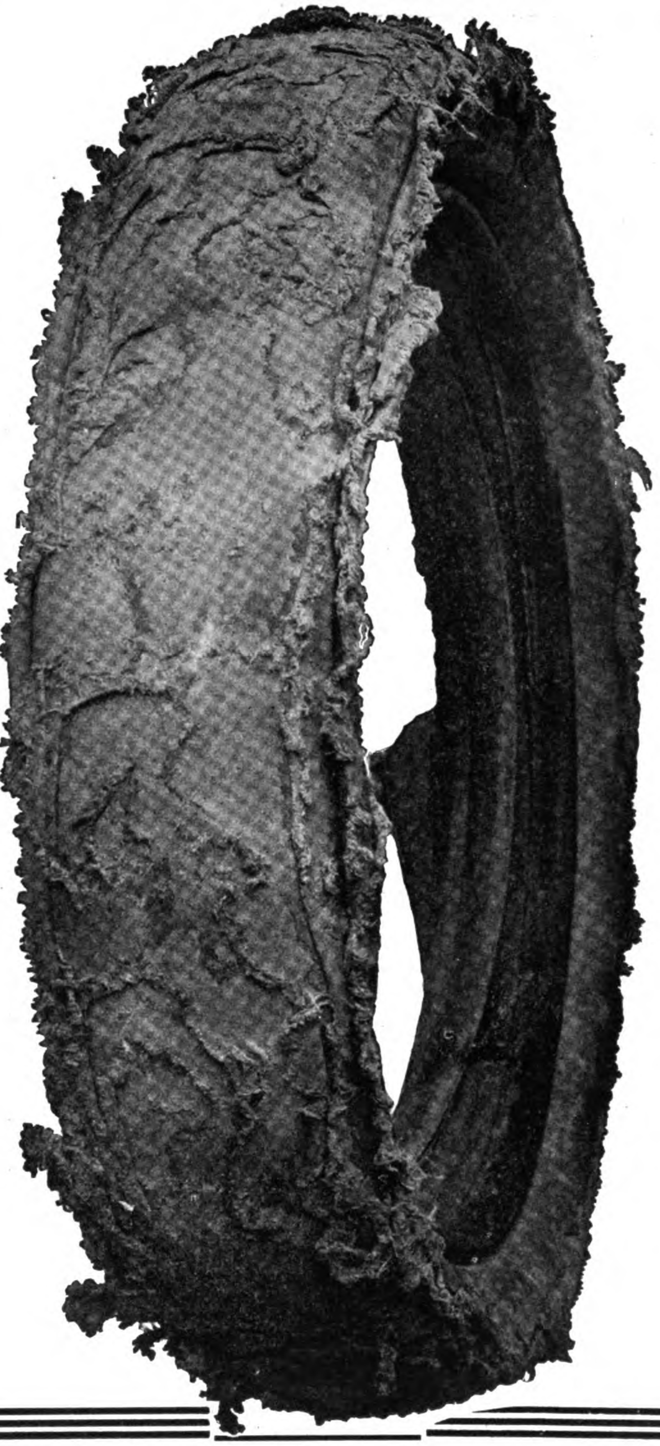
## ACCESSORY and GARAGE JOURNAL

TIMES BUILDING, PAWTUCKET, R. I.

What would this exclusive agency be worth in your town?

An agency that means you would earn all profits—be protected against price cutting—and have big revenues from a most successful tire and tube saving device. What would the agency be worth now—since tires and tubes have advanced in price—making every owner a prospective customer for four such devices?—

**MAXOTIRES**



**A Striking Example**

A shoe that afforded usual mileage was equipped with a MAXOTIRE.

The average owner would have discarded it—yet with the MAXOTIRE, gave thousands of additional miles of service.

This was so much net gain to the owner.

The MAXOTIRE is as good as new, and will continue to save tires and tubes.

(This tire was exhibited at many STATE FAIRS and AUTO SHOWS and was examined by tens of thousands of Auto Owners.

**MAXOTIRES**

We do business with but one dealer in any place and do not sell jobbers or consumers. Our proposition is broad and extremely liberal.

No other accessory sells so quickly or affords equal satisfaction. *The cost of tires and tubes is advancing and owners are seeking service giving and money saving equipment.*

Country-wide advertising brings queries from every city, town and village. Our dealers do all the business.

The quality of MAXOTIRES insures reorders and big net profits. MAXOTIRES sell themselves.

Our old dealers are with us this year—some are ordering MAXOTIRES in Car Load Shipments. Hundreds are ordering from a dozen to five-hundred tires at a time. You will be "doing it too"—if you get a few MAXOTIRES started. They sell themselves.

**K & W RUBBER COMPANY** **Third Street, ASHLAND, O.**

TRADE MARK
Starrett Tools
REG. U.S. PAT. OFF.
in the
Garage

# STARRETT TOOLS IN THE GARAGE

*Tools Determine the Quality of Your Service*

ON such jobs as this, for instance, it might be said that "there are no limits of accuracy". Readings must be exact.

It is an easy matter to be sure of the readings—just remember the name Starrett. And, by the way, you will find Catalog No. 21 GT mighty interesting reading. It describes the 2100 styles and sizes of the Starrett line, and will be sent on request.

STARRETT TOOLS TRADE MARK REG. U.S. PAT. OFF.

The L·S·Starrett Co·Athol·Mass·
*World's Greatest Toolmakers*

4-679

(When Writing to Advertisers, Please Mention the Accessory and Garage Journal.)

The ACCESSORY and GARAGE JOURNAL

Devoted Exclusively to the Automobile Trade and Allied Interests.

VOL. VII. PAWTUCKET, R. I., JUNE 1917. No. 2

# Automobile Dealers Push National Asso. Plans

### Delegates to Form Organization Will Meet in the La Salle, Chicago, July 10-11.

The National Automobile Dealers' Association will hold a meeting in the La Salle Hotel, Chicago, July 10 and 11. The first session is scheduled for 10 o'clock. This committee was formed in Washington at the time of the fight against the five per cent. tax. Bart J. Ruddle is acting as secretary of the provisional committee. Associations are requested to send to Ruddle, 316 Germania building, Milwaukee, Wis., the names of delegates and alternates in order to facilitate the work.

## GULF REFINING CO. ISSUES TOURING MAPS.

The Gulf Refining Co., Pittsburg, Pa., has issued through its Touring Bureau, touring maps of New England, New York, New Jersey, Southern States, Middle West States, Pennsylvania, Texas and Transcontinental, showing all trails.

These maps, which are corrected to date, show all the motor routes in the territories covered and are a valuable aid to the motorists who are touring through those sections.

Copies may be secured from any of the Gulf Refining dealers who display the sign of the orange disc, or will be mailed upon request to the Gulf Refining Co., Frick Building Annex, Pittsburg, Pa. Requests for touring information will also be furnished by the company's Touring Bureau.

## "GREATER MARKET FOR MOTOR CARS THAN EVER."

Roscoe A. Pickens, general manager of the Metz Company, Waltham, Mass., has compiled a very interesting set of statistics showing the present condition of the market for motor cars in this country, and taking them as a basis, estimates the possible buyers at 7,000,000, which he considers a conservative figure.

"It must be understood that the automobile market is divided into two fields," he said, in his statement to the leaders of the industry, and to dealers throughout the country, first the rural class, which includes all persons engaged in farming or living in towns of less than 500 population; and, second, the urban class or people living in places of more than 500. There are in the first class 6,500,000 families. One million of these now own motor cars and 1,500,000 are poor and for the purpose of our study may be eliminated. This leaves 4,000,000 families possible buyers of motor cars.

"In the urban class there are 11,000 towns and cities, with about 5,000,000 home owners. Of this number 2,000,000 own automobiles now. Accordingly, there remains 3,000,000 prospective buyers in this class, or a combined unsold rural and urban market of 7,000,000. In addition to this there is the market for cars to men who are already owners. The average life of a car is five years, so that 20 per cent. of present owners must buy every year. This is true because once a man owns a car he never gets along without one."

# Anti Price Cutting Move by Philadelphia Garages

### Price Cutting and Other Unfavorable Conditions to Be Eliminated From the Trade.

The Philadelphia Garage Association has been organized in an endeavor to correct growing evils in the trade. The officers of the new company are: President, Charles Meiswinkle, Colonial Garage; vice president, H. H. Dummings, Twentieth Century Garage; secretary, Mark White, Ebert's Broad Street Garage; treasurer, Harry Eberts, Ebert's Broad Street Garage. Several meetings have been held and the 75 men comprising the association are determined to eliminate the unfavorable conditions of the trade. Action will be taken at the next meeting to organize local associations throughout the city to be known by the names by which the different sections of the city are usually designated. The biggest evil recognized by the association is that of price cutting.

# Ajax Rubber Makes Record Earnings in May

### Tire and Tube Orders Pile Up More Than 100,000 Ahead of Deliveries.

The Ajax Rubber Co., New York, earned during the month of May $319,588, or at the rate of $3,835,044. For the five months ended May 31 net earnings were $1,102,684, or at the annual rate of $2,646,444. The returns for May were the largest in the history of the company.

The company is now over 100,000 behind its deliveries of tires and tubes.

The company engaged $100,000 worth of Liberty Loan Bonds, in addition to $30,000 or $40,000 subscribed for by employes of the Ajax company.

## AIRPLANE PLANT COMPLETED.

The Michigan Aircraft Company, Grand Rapids, Mich., which was recently formed to manufacture airplane engines, has completed its plant and is now ready for production. The company will build two types of machines, including the Curtiss standard eight-cylinder, 100 horsepower type for military machines and for flying boats. The president and treasurer of the company is E. J. Clark, and R. F. Seyferth is assistant secretary and treasurer. The chief engineer is Anthony Stadlman and Bert Kenyon is secretary.

## GOVERNMENT BEARINGS ORDERS.

The Hess-Bright Manufacturing Co., Philadelphia, Pa., have booked large orders for ball bearings, specified in governments contracts, with large manufacturers of motor trucks and aeroplanes, and many orders for thrust bearings of the larger sizes specified for use in building submarine chasers have also been booked.

## SHOP LIST WITHDRAWN.

The New Britain Machine Co., New Britain, Conn., have withdrawn all prices on their line of shop furniture pending issuance of a new price list.

# Bosch Magneto Gets Big Order for U.S. Army Trucks

### Company Announces Plans of Operation in Connection with 30,000 Vehicle Government Contract.

Carl L. Schurz, recently elected president of the Bosch Magneto Co., in announcing that the company had secured a contract for 30,000 magnetos to be used on army trucks, denied the statement that the Plainfield, N. J., plant would be closed. He said that the company would concentrate on ignition apparatus at the Springfield, Mass., plant and would continue the Plainfield plant as an auxiliary.

As a result of the exodus of Germans from the company's employ following the President's alien enemy proclamation, there is an acute shortage of labor at the plants, although 40 new men have been put on the pay rolls at the Springfield plant within the last week or two.

President Schurz's denial was to set at rest various rumors affecting the Bosch Magneto Company which have been in circulation and in print ever since the entry of the country into the war. The declaration is made that while through perturbation of mind a number of the company's employees who are German subjects resigned, the mechanical staff was very little disturbed.

## NON-CREEPING AUTOMOBILE TIRE CHAIN ANNOUNCED.

The Rowe Calk Co., Hartford, Conn., announces that it will shortly offer a line of non-creeping tire chains for passenger cars, in addition to its line of motor truck chains of the anchored type to be sold through recognized automobile accessory jobbers only. The Rowe company uses the trade name Prest-O-Grip for this line and claims that the idea that chains must creep in order to protect tires from excessive wear will be entirely upset. The further assertion is made that tire equipments to prevent skidding is due to be revolutionized by the advantage over other types of a small number of chains, each swinging over a considerable portion of the tire.

## NEW TRUCK COMPANY FORMED.

The Crescent Motor Truck Co., Inc., has been incorporated in New York to enter the market with a 1500 pound delivery car to sell for around $1000. Temporary quarters have been taken at 1457 Broadway, New York City. Joseph W. Brooks is president.

## REO WINS VALVE SUIT.

The Reo Motor Car Co. on June 13 won in a patent decision handed down by Judge Hazel of New York in the case of William Barber, who sought to recover $1,500,000 for alleged infringement of valve patent. The Reo Motor Car Co. introduced additional evidence showing that the Reo mechanism does not, either in design or application, infringe the Barber patent.

## E. M. NEWALD MAKES CHANGE.

E. M. Newald, formerly manager of the new business in the Chicago office of the Guaranty Banking Corp., has joined the Commonwealth Finance Corp. as assistant to George McIntyre, sales manager.

## 2,000,000 MARK PASSED BY FORD.

The Ford Motor Car Co., Detroit, Mich., broke a record on June 18 when the production of the model T Ford motor reached over the 2,000,000 mark.

# TRADE INFORMATION EXCHANGE

## A National Clearing House for the Trade's Needs

### GASOLINE PLEASURE CARS.

**Vermillion, O.;** The Bristol Company is anxious to secure an agency for pleasure cars; selling price, $400 to $1000.

### GASOLINE COMMERCIAL CARS.

**Wilmington, Del.;** The Delaware Motor Sales Company is interested in gasoline commercial cars; selling price, $1000 up.

**Vermillion, O.;** The Bristol Company is in the market for gasoline commercial cars; selling price, $700 to $1000.

### SPECIAL OPPORTUNITY.

**Wheeling, W. Va.;** Hawthorne Automobile and Equipment Co. (Lock Box 415), would consider the agency for cylinder reboring tools of merit in the territory of West Virginia and Ohio.

**Vermillion, O.;** The Bristol Company would consider the agency for ends and parts in the territory of Lorain counties.

### ACCESSORIES AND EQUIPMENT.

**Wilmington, Del ;** The Delaware Motor Sales Co. wishes to secure bumpers, fire extinguishers (Kelsey), rims, polishes, searchlights, spark plugs, sponges, chamois, seat covers.

**Augusta, Ga.;** Morris-Lewis Garage and Supply Co. would like to secure bearings, carburetors, celluloid, coils, cones, glass, pinions, pins, pistons, platinum, rests, shims, storage systems.

**Fall River, Mass.;** Capitol Motors Corp. is in the market for axles, batteries, bearings, belts, bodies, bolts, bulbs, bumpers, cabinets, cable, caps, carburetors, castings, chains, clamps, clips, cups, cushions, dashes, dimmers, doors, drills, elevators, emblems, fenders, forgings, frames, gaskets, gauges, headlights, hoists, holders, horns, hose, hubs, hydrometers, ignition, indicators, jacks, lamps, lathes, locks, magnetos, meters, measuring instruments, motors, mufflers, nuts, odometers, paints, plugs, pumps, radiators, ratchet drills, reamers, rims, seats, shock absorbers, speedometers, springs, starters, steel, steering gears, steps, tanks, tires, tools, transmissions, upholstery, vises, wheels, windshields, wrenches and special bodies for commercial cars. The products are to be used for manufacture of motor trucks.

**Grand Rapids, Mich.;** Lake Drive Auto Co. is anxious to secure batteries, celluloid, fasteners, hoists, jacks, plugs, recording time clocks, tire accessories, tires, tops and parts, trimmings, upholstery, vulcanizers and special bodies for pleasure and commercial cars.

**Jackson, Mich.;** The Day-Hamlin Mfg. Co. wishes to obtain bolts, clips, drills, engines (tractor), fans, lathes, machinery, presses, pullers, punches, radiators, reamers, steel, water cooling for Ford cars. The products are to be used for tractor and tractor attachments.

**Brooklyn, N. Y.;** Harris Building Co., 190 Montague street, is desirous of securing separators, tanks and pumps for cars.

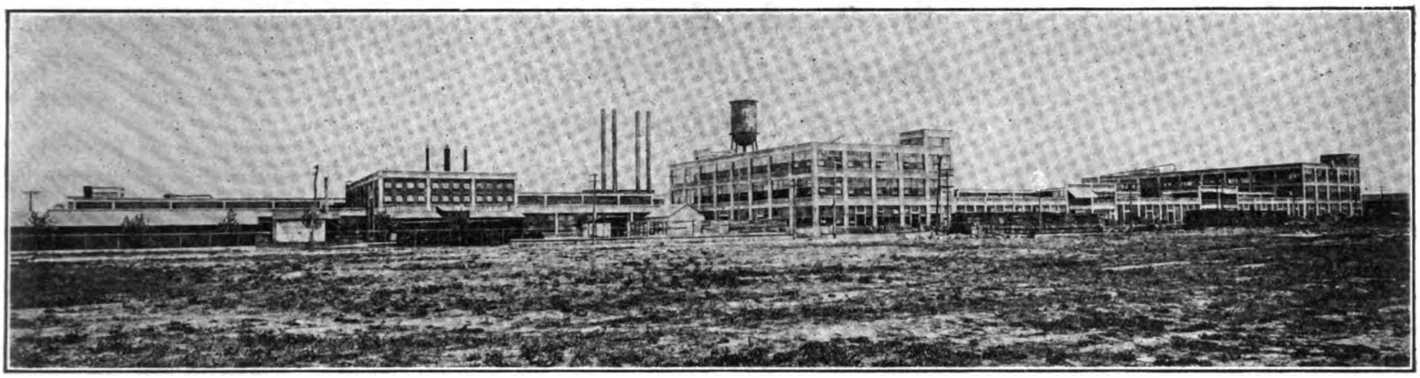
**Niagara Falls, N. Y.;** James Mullane is anxious to secure air compressors, air pumps, bolts, bulbs, bumpers, cable, chains, drills, grinders, hose, lathes, plugs, tires, tools. The products are to be used for equipment and sale.

**Mansfield, O.;** The Halladay Motor Car Co. is interested in air compressors, air pumps, anvils, asbestos, autogenous welding equipment, axles, batteries, bearings, bolts, brakes, bulbs, bumpers, cable, caps, carburetors, celluloid, chains, charging apparatus, clutches, curtains, cushions, emblems, engines, fans, fenders, frames, headlights, horns, hubs, ignition, lamps, lathes, leather, machinery, magnetos, mechanical starters, meters, mufflers, nuts, paints, plugs, printed matter, radiators, rims, speedometers, springs, starters, steering wheels, tires, tools, tops and parts, transmissions, turntables, wheels, windshields, wrenches and special bodies for pleasure cars. The products are to be used for the manufacture of Halladay autos.

**Vermillion, O.;** The Bristol Co. would like to secure bodies, chains, tire accessories, tires, windshields.

**Pawhuska, Okla.;** Osage Garage would like to secure axles, bearings, bulbs, bumpers, camshafts, carburetors, chains, cranes, dimmers, emblems, fenders, fire extinguishers, goggles, radiators, starters, shock absorbers, tops and parts.

**Wheeling, W. Va.;** Hawthorne automobile and Equipment Co. (Lock Box 415), is anxious to secure air compressors, air pumps, anti-rattlers, anvils, arbor presses, asbestos, autogenous welding equipment, axles, banding, batteries, bearings, belts, bolts, brakes, brushes, bulbs, bumpers, burners, cabinets, cables, camshafts, cans, caps, carbide, carburetors, cases, castings, celluloid, cements, chains, charging apparatus, chemical tanks, clamps, clips, cloth, clutches, coils, collars, commutators, cones, connectors, controllers, couplings, cranes, cups, curtains, cutters, cushions, cylinder machines, cylinders, dashes, dimmers, lubricators, machinery, magnetos, maps, mechanical starters, metal parts, meters, measuring instruments, molds and cores, motor controllers, motors, mufflers, nuts, odometers, packing, paints, pans, patches, pedals, pinions, pins, pistons, platinum, plugs, polishes, presses, primers, printed matter, pullers, pulleys, pumps, punches, purifiers, races, racks, radiators, ratchet drills, reamers, rectifiers, reflectors, regulators, removers (carbon), rests, rheostats, rims, rods, rubber, scrapers, screws, searchlights, seats, separators, shafting, shapers, shims, shock absorbers, soaps, sockets, solder, speedometers, spokes, springs, stampings, starters, steel, steering wheels, steps, storage systems, strainers, switchboards, switches, tanks, tape, terminals, testers, timers, tire accessories, tires, tools, tops and parts, transmission, trimmings, trunks, tubing, turntables, upholstery, valves, vaporizers, varnishes, ventilators, vises, voltmeters, vulcanizers, washers, washstands, waste, wearing apparel, wheels, whistles, windshields, wire, wrenches, special bodies for pleasure and commercial cars.

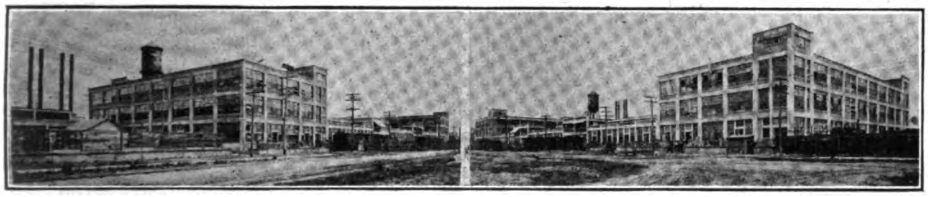


**New Storage Battery Plant of the Prest-O-Lite Co., Inc., Indianapolis, Ind., Which Will Turn Out More Than Half Million Prest-O-Lite Batteries Per Year.**

# Prest-O-Lite Continues Plant Expansion

## Storage Battery Makers Occupy Floor Space of 150,000 Square Feet Including the Old Plant and Additions

PREST-O-LITE products have always enjoyed such immense popularity with the motoring public that the makers, the Prest-O-Lite Co., Inc., Indianapolis, Ind., in furnishing facilities for service to their customers of the most comprehensive nature, have had a remarkable building programme to carry out in order to keep up with business demands.



**West Wing—The New Prest-O-Lite Plant—East Wing.**

Since the introduction of the Prest-O-Lite storage battery about two years ago, the growth in business on this product has been rapid. The storage battery is of the highest grade, but the great demand came largely through the enormous prestige gained in the automobile world by the universal service system for users of Prest-O-Lite "gas tanks" with which most motorists are familiar.

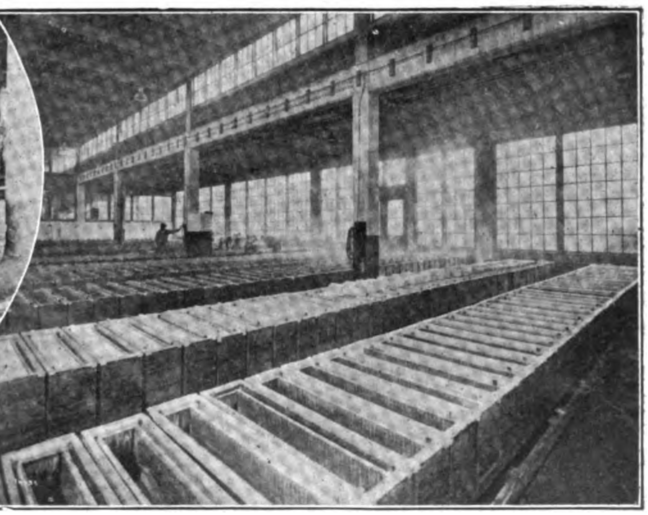
The large factory devoted to the manufacture of the storage batteries became inadequate to cope with the demand some time ago and compelled the erection of two large additions, which are now being equipped. The first factory, which had an output of 400 batteries daily, soon became inadequate to cope with the demand and a new plant was built, trebling the capacity. This plant was completed last year, was of one story, 100x400 feet. With a daily production of 1200 batteries per day it was anticipated that orders could be filled on time for many months, but it soon became evident that further expansion of the plant would be necessary to meet the demands of the motor car manufacturers and public.

Two new additions were erected early in the present spring and are now being equipped. They are three stories each and form ells at either end of the plant built last year. The west building is 100x160 feet long, with a floor space of 48,000 square feet, and the east building is 100x200 feet, with a floor space of 60,000 feet. The total floor space, including the old plant and the additions, is 150,000 square feet. All three structures front on the same line and a concrete shipping platform, 12 feet wide runs the entire length—600 feet along the railroad siding, which connects with the Big "4" and C. I. & W. railroads.

Much new machinery and new equipment is being installed in the new additions and all departments are being expanded so that when the whole plant is in operation it will make possible an immediate increase of 50 per cent. in the output of Prest-O-Lite storage batteries, with plenty of room available for further expansion. The capacity of the plant will be 1800 batteries a day, or at the rate of half a million yearly.

On the first floor of the west building an enlarged foundry has been installed for casting the "grids" for Prest-O-Lite battery plates. The second floor will be taken up by the physical laboratory for the testing of materials and the battery research laboratory, where experiments for possible improvements never cease. These laboratories are similar to those moved from the old plant, but enlarged on a more elaborate scale. On the third floor a drafting room and general chemical laboratory will be housed.

Making "Grids" in the Foundry and Clipping Room.



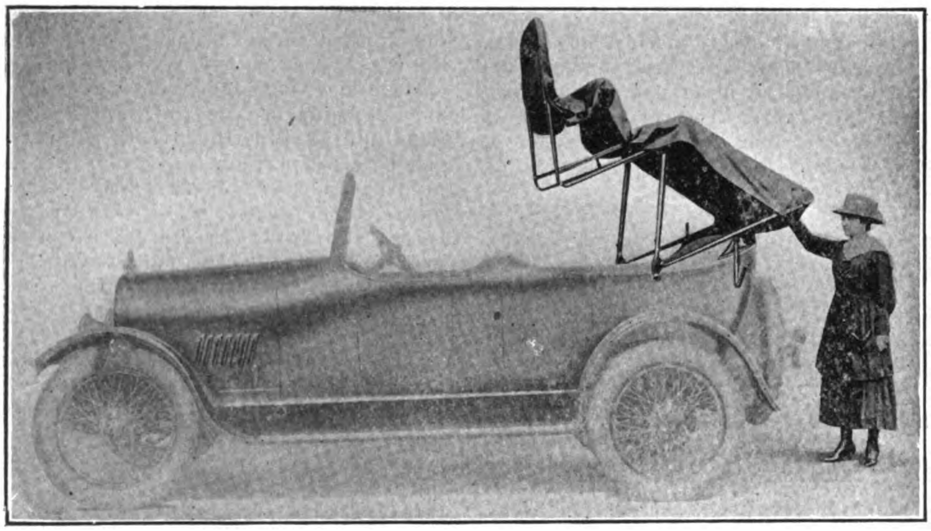
**Section of Department Where Prest-O-Lite Battery Plates Are Formed.**

The original building will be devoted to the filling and forming of battery plates, the battery assembling and charging. A new department, in which the battery boxes are to be manufactured, is being installed in the east building on the third floor, which has an area of 20,000 square feet. The second floor of this building will be used as a store room for raw materials. The packing and shipping department is located on the ground floor.

Prest-O-Lite battery users will be served by the most far reaching and comprehensive service ever maintained for the convenience of motorists. The Prest-O-Lite company has 33 direct factory branches and more than 600 officially appointed battery service stations.

### WESTCOTT SERIES "18" FEATURES SELF-ACTING TOP.

The Westcott Motor Car Co., Springfield, O., announces a continuation of the single chassis plan in the Westcott series "18" production, which began May 1. Prominent among new features, however, is the Westcott self-acting top, which is remarkable for the ease with which it operates. It can be folded back by one person standing at one side or in the car.



**Self-Acting Top in the Westcott, Series "18." Made by the Westcott Motor Car Co., Springfield, O.**

Series "18" consists of three open and two closed models, in addition to two Victoria top cars. The open models are a four-passenger roadster and five and seven-passenger touring cars, which are all listed at the uniform price of $1790. The closed models are a five and seven-passenger sedan, priced at $2290 each. Victoria top models are offered with the five and seven-passenger touring bodies at $1940.

The engine is a Continental six-cylinder, with block cast L head, 3½x5¼. The wheelbase is 125 inches.

### GOVERNMENT TAKES JOY FIELD.

The U. S. Army has taken over the aviation field founded by Henry B. Joy in Southern Michigan, three miles east of Mt. Clemens.

## *N. A. A. A. J. Purchase Liberty Bonds and Ambulance*

### Accessory Jobbers Contribute $10,000 to the Country's Need and Show Big Net Balance.

TWENTY new members were elected and much business of importance was transacted at the meeting of the board of directors and membership committee of the National Association of Automobile Accessory Jobbers, held at Excelsior Springs, Mo., on May 30, 31 and June 1.

The treasurer was authorized to purchase $10,000 worth of Liberty Bonds and a sufficient sum was appropriated to provide an ambulance and a field man to operate it for one year. The ambulance will bear the name of the organization.

The treasurer reported a net balance in the treasury of $34,652.59, including the bonds which the association now holds. The report of the credit and collection department showed 2483 claims had been submitted to headquarters, totaling a sum of $120,674.29, of which 1033 claims, totaling $59,571.62, had been collected, or 49½ per cent. of the total.

The following jobbers were elected to regular membership:

D. W. Alderman, Jr., Florence, S. C.; Borderland Auto Supply Co., El Paso, Tex.; Dine-DeWees Co., Canton, O.; Denver Auto Goods Co., Denver, Col.; Foster Auto Supply Co., Denver, Col.; C. W. Greene Co., Tampa, Fla.; Geller, Ward & Hasner Hardware Co., St. Louis, Mo.; Hilliard & Yokes, Erie, Penn.; Johnson Tire Co., Montgomery, Ala.; Master Sales Co., Omaha, Neb.; Northwestern Auto Supply Co., Billings, Mont.; Price Auto Equipment Co., Wichita, Kan.; Saskatchewan Motor Co., Regina, Saskatchewan, Can.; Williams Hardware Co., Clarksburg, W. Va.

The following manufacturers to associate membership:

Bailey Non-Stall Differential Co., Chicago, Ill.; Champion Spark Plug Co. of Canada, Windsor, Ont.; Colorado Tire and Leather Co., Denver, Col.; Connecticut Telephone and Electric Co., Meriden, Conn.; Standard Woven Fabric Co., Walpole, Mass.; Victor Manufacturing and Gasket Co., Chicago, Ill.

The following resolution was passed:

"For the purpose of giving all divisions of our membership a more equitable representation on all committees and that jobbers and manufacturers alike may feel that they have an equal responsibility and interest in all legislation and matters pertaining to the workings of the association, be it resolved, that in future a more equal division and representation of jobbers and manufacturers form all committees."

Commissioner Wm. W. Webster reported that the automobile telegraphic code had been printed and copies sent to his office for distribution. It was decided to hold the next meeting either the last week of August or the first week of September, and the matter of selecting the place for the meeting was left in the hands of the commissioner, to be taken up later with the directors.

### CULVER-STEARNS LEASES ADDITIONAL FLOOR SPACE.

The Culver-Stearns Manufacturing Co., Worcester, Mass., has taken a long term lease of the new four-story reinforced concrete building on Hygeia street, in that city, containing 25,000 square feet of floor space. The new building will be occupied on July 1 and the present plant in the Stevens block will be vacated. An increase in the working force of 100 will be made when the new structure is occupied, making the total number of employees 300.

### DETROIT, THE "AUTOMOBILE CITY," NOW RANKS FOURTH.

Detroit, the "Automobile City," now ranks fourth in size of the cities of the United States, having a population of over 800,000, an increase of nearly 100 per cent. since 1910, when the last national census was taken.

Its phenomenal growth in population, which has placed it above St. Louis, Baltimore, Cleveland and Boston, has been the direct result of the marvelous development of the automobile industry, which last year reached the enormous total of $1,000,000,000, which amount represents the gross sales of its products.

### CROWTHER STOCKHOLDERS TO BE PAID IN FULL.

Arrangements are being made, it is understood, to pay back to the stockholders of the Crowther Motors Corp. every cent of their investment. The company is to be reorganized, but will abandon the manufacture of pleasure cars and engage in the manufacture of light trucks at the plant in Greece, N. Y.

# *Stanley Announces Reorganization*

### Prepares for Greatly Expanded Business With New Capitalization of $2,500,000.

The announcement of the reorganization of the Stanley Motor Carriage Company of Newton, Mass., was one of the most interesting pieces of news received in automobile trade circles for a long while, as the maker of the Stanley steam car is one of the oldest motor car manufacturing concerns in the world and noted as one of the most conservative.

With the reorganization a policy of expansion will be inaugurated to meet the greatly increased demand for steam-propelled cars, which has sprung up within the last 12 months. The old company has been taken over by a new company of the same name, organized and incorporated under the laws of Delaware with a capital composed of 2,500,000 shares of preferred stock and 100,000 shares of common stock of no par value. This stock has been subscribed and no public offerings will be made.

Several changes have been made in the personnel of the board of officers and directorate as a result of the reorganization. Prescott Warren, formerly vice president of the company, is the new president, and Edward M. Hallet, former secretary, has been elected treasurer. Carleton F. Stanley remains as vice president in charge of production, and Frank Jay, formerly western manager, has been elected vice president in charge of sales.

These officers have all been connected with the company for over 10 years and will also be members of the directorate, together with Charles Counselman and Arthur L. Goodwillie of the Chicago banking house of Counselman & Co., which has made an extensive financial investment in the company.

The history of the Stanley car dates back to the earliest days of the motor car. F. O. and F. E. Stanley built the first Stanley steamer in 1895, which they kept for their own personal use. The successful operation of this car attracted the attention of many people and they placed orders with the Stanleys for similar cars. This lead to the manufacture of the car in commercial quantities and in 1898 a dozen cars were built and sold. By July, 1899, 200 stock cars had been built all alike and marketed. The success of the business attracted outside capital and that same year the Stanley brothers sold out under an agreement that they would not re-engage in the business of manufacturing automobiles inside of one year. The interests that acquired the business founded the Mobile Co. at Tarrytown, N. Y., and the Locomobile Co. of America at Bridgeport, Conn.

In 1901, when their agreement expired, the Stanley brothers incorporated the Stanley Motor Carriage Co., which has been in operation ever since. For many years they were the only makers of steam propelled cars in this country, readily marketing the product which had made a world wide reputation on the race courses. F. O. Stanley, 18 years ago, in one of his own cars, made the first automobile climb of Mt. Washington, and his brother, F. E. Stanley, in a stock car at Readville made the first recorded mile under one minute. In 1906 a Stanley car at Ormond Beach did a mile in 28 1/5 seconds, establishing a record which stood for six years.

The Stanley steamer operates on steam burning for fuel kerosene, gasoline or a mixture of the two. Its simplicity of operation and ease of control are features. The engine is always in mesh with the differential and while being operated there is constant reserve power in the boiler, which can be utilized by simply moving a throttle. There is no necessity for the clutch, gear shift, gears and spark and gas controls such as are found on cars propelled by the internal combustion engine.

# *Bankruptcy Call For Kent Motors*

### Petitioned Into Court by Creditors and Fraud Charge Against Secretary Clarke.

The Kent Motors Corp., 1740 Broadway, New York City, has been petitioned into bankruptcy and Frederick H. Clarke, president of the company, and Dr. Henry O. Clarke, secretary, are under arrest, charged with using the mails to defraud.

In the hearing on the case the former sales manager of the company testified that the entire works of the Kent Motors Corp. did not employ over 10 men and that only 10 or 12 cars had been turned out at the time the bankruptcy proceedings were begun. He also said that the company had published a booklet in which a large plant was shown, with water tower, railroad sidings and other things that did not exist except on paper.

Archibald Palmer, counsel for the creditors, said that the only plant he found at Belleville, N. J., belonging to the Kent Motors Corp. was a ramshackle old building.

## NATIONAL PRODUCTS CO. BUYS PULLMAN MOTORCAR.

The Pullman Motor Car Co., York, Penn., which has been in the hands of a receiver for some time, has been sold to the National Products Co. of Newark, N. J.

## DRILLING AT PLATTSBURG.

Malcolm R. McAdoo and Wallace A. Coleman, both of the sales department of the Chevrolet Motor Company of New York, and M. J. Correy of the material department, have gone to Plattsburg as members of the Officers' Reserve Corps.

# *Westinghouse Co. Shows Big Gain*

### Surplus Nearly Double Last Fiscal Year. Foreign Marketing Plan Changed.

The annual report of the Westinghouse Electric Manufacturing Co. shows that the company had a surplus of $18,105,298 at the end of the fiscal year, March 31, or nearly double that at the close of the corresponding year in 1916. A total of $5,000,000 was set aside from the surplus for the reserve fund, making the latter total over $6,000,000.

Gross sales during the year totaled $89,539,442, on which the net manufacturing profit was $17,461,690, and additional income of over a million dollars was received from interest, dividends and royalties.

The company's balance sheet as of March 31, 1917, was as follows:

| | |
|---|---|
| ASSETS. | |
| Property and plant | $22,701,110.02 |
| Sinking fund | ............ |
| Investments | 18,156,577.43 |
| Cash | 12,476,320.35 |
| Cash on deposit for redemption of matured debenture certificates, bonds, notes and for interest and dividends—see contra | 149,254.32 |
| Notes receivable | 4,935,511.06 |
| Accounts receivable | 32,757,631.71 |
| Working and trading assets | 31,934,594.79 |
| Other assets | 4,431,811.31 |
| Total | $125,542,810.99 |
| LIABILITIES. | |
| Capital stock— | |
| Preferred | $3,998,700.00 |
| Common | 70,813,950.00 |
| Total capital stock | $74,812,650.00 |
| Funded debt— | |
| Convertible sinking fund, 5 per cent. gold bonds, due Jan. 1, 1931, outstanding | ............ |
| Collateral notes | 2,720,000.00 |
| Long term notes | 83,750.00 |
| Real estate purchase money mortgage | 180,000.00 |
| Notes payable—bank loans | 15,100,000.00 |
| Accounts payable | 5,988,180.82 |
| Interest, taxes, royalities, etc., accrued, not due | 2,470,164.29 |
| Dividends accrued | 1,309,221.38 |
| Advance payments on contracts | ............ |
| Unpaid debenture certificates, bonds, notes and interest and dividends—see contra | 149,254.32 |
| Reserve | 6,624,291.52 |
| Profit and loss—surplus | 18,105,298.66 |
| Total | $125,542,810.99 |

The operations of the Westinghouse Machine Company is not included in the balance sheet, although 98 per cent. of the stock is owned by the Westinghouse Electric Company.

A plan is being completed through which the Westinghouse Electric and Manufacturing Company of Pittsburg will sell its interest in the British Westinghouse Electric Company, which controls the French and Italian Westinghouse companies. As a result of this action the control of the Westinghouse foreign business will pass from New York to London.

# *Abundant Supply of Military Trucks Available*

**Bids Submitted to Government Show 100,000 Trucks Can Be Made In a Year.**

That there will be no difficulty in securing all the motor trucks necessary for the new army which is to be raised was demonstrated by the fact that the 73 truck makers who submitted bids to the government at Chicago recently pledged that they could produce over 100,000 trucks within a year, whereas it is unofficially estimated that not over 42,000 trucks will be required for the first army of 1,000,000 men.

In all, 72 truck makers submitted bids, this list not including some companies now solely engaged in supplying the Allies. The bids show that several hundred trucks could be delivered to the government immediately, and that 3000 to 8000 per month can be delivered throughout the year, beginning in three to six months.

Forty-three of the truck makers bidding offered to build trucks according to the War Department specifications prepared by its motor transport board in conference with committees of the Society of Automotive Engineers. Of these 22 makers are prepared to build the class A (2½-ton) war department truck, and 19 to build the class B (five-ton) war department job.

It is also seen that bids have been submitted by makers offering about 70,000 class A trucks, this number including regular models of the maker, as well as the government model. This offer includes only makers who have capacity for delivering over 500 trucks a year. Thirty-five makers submitted bids for this capacity of truck, 13 bidding on both regular models and the war department specifications; nine bid on the government model only and 16 makers bid on their regular models only.

Twenty-nine concerns presented bids totaling about 30,000 of the class B or five-ton trucks. Of these 14 bid on the war department model only; 10 bid on their regular production only, and five bid on both regular and war department models.

Two-thirds of the manufacturers in the country who are credited with making the major part of their trucks, bid on the war department and regular production together, while one-third bid only on a product to conform with the new government specifications.

All of the Allies on the western front are probably not using more than 50,000 trucks. The totals given above do not include figures representing the offers whose trucks are not in production.

## THE 1917 CHAMPION.

Many of the noted racing drivers having enrolled in the Aviation Corps and other branchs of the service, the American Automobile Association decided to eliminate the 1917 racing championship. When Uncle Sam's call takes the monarchs of the motordrome the question of racing champion must be left unsettled.

There's no question as to the champion brand of lubricants. Dixon's Graphite Automobile Lubricants have won undisputed honors—hands down. In scores of races, with scarcely an exception, they have been used by the winning drivers to kill friction, for the slightest delay due to friction is fatal. That's why the winners use Dixon's and why most of the other contestants follow suit. Dixon's will serve the pleasure or commercial driver just as well as they meet the requirements of the racers. Their use means more mileage—smoother, quieter running—less upkeep cost.

# *Emerson Motors Co. Will Continue Operations*

**Receivership Vacated in Concern Which Maintains It Is Solvent and Producing.**

A receivership in which the Emerson Motors Company, Kingston, N. Y., was placed recently, and which led to the indictment of 14 men in connection with its organization, has been vacated and the plant will be operated under the direction of Theodore A. Campbell, president of the company.

Bainbridge Colby, attorney for the company, says that the concern is solvent and has plenty of money with which to continue manufacturing operations. There are said to be nearly 100 cars ready for shipment at the plant and others will be built as rapidly as possible for shipment to dealers.

## CONVERT-A-CAR FORD TRUCK UNIT.

The Chicago Pneumatic Tool Company, makers of the Little Giant heavy duty truck, are introducing the Convert-A-Car, a super-sized Ford truck unit, built up of such over-size standard units that it is an actual truck in construction.

The Chicago Pneumatic Tool Company is a $14,000,000 corporation, with nearly a quarter of a century's experience in the tool and machinery manufacturing business. In marketing its new product the dealer is offered a very attractive proposition, details of which will be mailed upon application to the company.

## KOEHLER TRUCK AGENCIES.

The H. J. Koehler Motors Corporation, Newark, N. J., announce the appointment of the following agencies for Koehler 1¼-ton trucks: Davenny & Baskins, Greenville, Pa.; E. B. Fox, Box 425, Lexington, Ky.; M. R. Strode, Winchester, Va.; Saratoga Motor Sales Company, Saratoga Springs, N. Y.; Service Garage, 1012 W. Lexington street, Baltimore, Md.

# *Packard Motor Co. Sales Contest Completed*

**St. Louis Carries Off First Honors in the Main Division—List of Winners.**

St. Louis, Omaha, Youngstown, O., and Phoenix, Ariz., won the "Lincoln Highway Sweepstakes," the national carriage sales contest of the Packard Motor Car Company, according to announcement made by Henry Lansdale, carriage sales manager, which was started Feb. 22. The cities of the United States having Packard dealerships or branches were divided into four sections. Division "A" comprised the largest cities. St. Louis won with 115 per cent. of her quota sold. The St. Louis territory is controlled by the Packard-Missouri Motor Company, of which W. J. Parrish is president. Kansas City is included in this territory. Detroit was second with 103 per cent. of quota. Cleveland was third with 102 per cent. Philadelphia was fourth with 100 per cent.

The Orr Motor Sales Company of Omaha sold 200 per cent. of quota. The next four in division "B" are as follows: Washington, 147; Seattle, 144; Indianapolis, 127; Atlanta, 113.

In Division "C" H. S. Thorne of Youngstown sold 300 per cent. of his quota. San Antonio was second with 175. Montreal, third, 150. Denver, fourth, 128. Louisville, fifth, 125.

In Division "D" McArthur Brothers of Phoenix made the highest mark of the entire contest, with 350 per cent. of their quota sold. Fort Wayne was second with 266. Texarkana, third, 233. Saginaw, Mich., fourth, 150. Altoona, Pa., and Elmira, N. Y., tied for fifth place with 133 each.

Trophies for individual salesmanship did not go to the cities with the highest collective showings. The master salesmen with their sales scores are as follows. Division A, F. J. Peterson, Cleveland, sold 48 cars. F. C. Sibbard, Cleveland, 30. C. E. Holzkamp, New York, 27.

Division B, A. S. Blair, Baltimore, 21. H. C. Berg, Seattle, 19. D. H. Luttrell, Washington, 19.

Division C, E. W. Travis, Youngstown, 23. R. C. Lemm, Denver, 20. W. R. Hicks, Montreal, 11.

Division D, A. R. Dearborn, Phoenix, 13. M. D. Cubbage, Ft. Wayne, 8. B. N. Anthony, Texarkana, 7.

## BEARINGS SERVICE CO. TO AID.

The Bearings Service Company, which is rapidly establishing a chain of bearings service stations throughout the country, will render valuable assistance to the government in case of mobilization of motor cars for war purposes. Branches are now in operation in New York, Detroit, Chicago, Boston and a score of other large cities.

# Where to Get Parts for Orphan Cars

## Comprehensive Compilation Herewith Presented Gives Practically All the Cars, Named Alphabetically, With Addresses of the Firms Which Have Supplies on Each Car—Something Every Garage Needs Sooner or Later

CARS which no longer have a sponsor in the form of a going automobile concern that was responsible for their origin are still in use by thousands of motorists. In fact, there are in the neighborhood of 300 different makes which fall into the classification commonly called orphan cars. This condition has created a special repair problem of a very widespread nature, and, likewise, has brought about a special market within the repair branch of the industry. The fact that there are so many makes of cars still being used that are no longer manufactured has in the past presented quite a problem in the securing of new parts for them to both the owners and garagemen. It is particularly a disturbing thing to the garagemen when the cars are brought to them to be repaired and need replacement of parts.

To manufacture these parts specially for the job would make the price prohibitive in most cases. Out of this condition has grown a distinct business service of keeping parts for those cars which are no longer manufactured. This peculiar service to automobile owners and garagemen has grown into a vast business of itself, several concerns being capitalized into the hundreds of thousands of dollars in order to carry a complete line of these parts. One such firm alone carries practically a complete line of parts for over 240 different makes of cars that are no longer regularly manufactured.

In every sizeable city every day a garage or repairman has one or more calls for some part to replace a broken part on some one of these cars. Delays, vexations, a stoppage of the work or loss of the business ensue unless he knows just where to lay his hand on the part needed. He probably will not be familiar with the make or know what company acquired the extra parts when the manufacture of the car ceased, or be able to get in touch with the concern which found it profitable to continue to manufacture the parts. Often very extensive inquiries are necessitated to locate the supply house which keeps the desired part.

For this reason a compilation of all the companies keeping parts for orphan cars should prove invaluable to the repairman, owner and garage keeper. The following list has been specially and carefully compiled to show dealers who carry parts for the cars named. This list is most comprehensive and of immense value to every dealer and hundreds of car owners. It is worth preserving for reference when the unfailing emergency arises. Direct communication with dealers listed under the name of the car promises a speedy supply of the missing part, the saving of money and much valuable time.

The list follows:

**ABBOTT**......
Auto Gear & Parts Co., Chicago, Ill.
Jos. C. Gorey & Co., New York City.
Puritan Machine Co., Detroit, Mich.
Pacific Motor Car Exchange Co., N. Y. C.
Automobile Mechanics Corp., N. Y. C.

**ACME**......
Puritan Machine Co., Detroit, Mich.

**AEROCAR**......
Puritan Machine Co., Detroit, Mich.
Auto Gear & Parts Co., Chicago, Ill.
Auto Parts Co., Chicago, Ill.

**ALCO**......
Alco Service Co., Philadelphia, Pa.
American Locomotive Co., Providence, R. I.
Joseph C. Gorey & Co., New York City.
International Motor Co., New York City.
Puritan Machine Co., Detroit, Mich.
Rand & Chandler, Los Angeles, Cal.
Pacific Motor Car Exchange Co., N. Y. C.

**ALDEN-SAMPSON**......
Standard Motor Parts Co., Newcastle, Ind.

**ALLEN-KINGSTON**......
Jos. C. Gorey & Co., New York City.
New Departure Mfg. Co., Bristol, Conn.

**ALLIS-CHALMERS**......
Puritan Machine Co., Detroit, Mich.

**ALPENA**......
Puritan Machine Co., Detroit, Mich.
Jos. C. Gorey & Co., New York City.

**AMERICAN MORS**......
St. Louis Car Co., St. Louis, Mo.

**AMERICAN**......
American Motors Parts Co., Indianapolis, Ind.
Auto Gear & Parts Co., Chicago, Ill.
Auto Parts Co., Chicago, Ill.
Burt Motor Car Co., Los Angeles, Cal.
Joseph C. Gorey & Co., New York City.
Levene Motor Co., Philadelphia, Pa.
V. A. Longaker & Co., Indianapolis, Ind.
Puritan Machine Co., Detroit, Mich.
Maxwell Bros. Auto Salvage Co., St. Louis, Mo.

**AMERICAN TRUCK**......
Auto Parts Co., Chicago, Ill.
Pacific Motor Car Exchange Co., 221 West 53d St., New York City.

**AMERICAN VOITURETTE**......
Standard Motor Parts Co., Newcastle, Ind.

**AMES**......
Auto Gear & Parts Co., Chicago, Ill.

**AMPLEX**......
Gillette Motors Co., Mishawaka, Ind.
Joseph C. Gorey & Co., New York City.
Pacific Motor Car Exchange Co., N. Y. C.
Maxwell Bros. Auto Salvage Co., St. Louis, Mo.

**ANCHOR**......
Anchor Buggy Co., Cincinnati, O.

**ANHUT**......
Puritan Machine Co., Detroit, Mich.
Auto Parts Co., Chicago, Ill.

**ARDSLEY**......
Ardsley Motor Car Co., Yonkers, N. Y.

**ARGO**......
Puritan Machine Co., Detroit, Mich.

**ATLANTIC**......
Puritan Machine Co., Detroit, Mich.

**ATLAS**......
Puritan Machine Co., Detroit, Mich.
Auto Gear & Parts Co., Chicago, Ill.
Auto Parts & Repair Co., Springfield, Mass.
Jos. C. Gorey & Co., New York City.
Pacific Motor Car Exchange Co., N. Y. C.

**AUTOCAR**......
Auto Car Co., Ardmore, Pa.

**AUTOCRAT DEFENDER**......
Maxwell Bros. Auto Salvage Co., St. Louis, Mo.

**BABOOCK**......
Babcock Mfg. Supply Co., Watertown, N. Y.
Joseph C. Gorey & Co., New York City.
Puritan Machine Co., Detroit, Mich.

**BADGER**......
Schultz & Harder, Columbus, Wis.
Auto Gear & Parts Co., Chicago, Ill.
Puritan Machine Co., Detroit, Mich.

**BARNES**......
Puritan Machine Co., Detroit, Mich.
Auto Parts Mfg. Co., Detroit, Mich.

**BENHAM**......
Puritan Machine Co., Detroit, Mich.
Jos. C. Gorey & Co., New York City.

**BERGDOLL**......
Auto Gear & Parts Co., Chicago, Ill.
Louis J. Bergdoll Co., Philadelphia, Pa.
Joseph C. Gorey & Co., New York City.
Levene Motor Co., Philadelphia, Pa.
Puritan Machine Co., Detroit, Mich.
Auto Parts Co., St. Louis, Mo.
Pacific Motor Car Exchange Co., 221 West 53d St., New York City.
Maxwell Bros. Auto Salvage Co., St. Louis, Mo.

**BERKSHIRE**......
Auto Gear & Parts Co., Chicago, Ill.
E. B. Belcher, Cambridge, Mass.
Berkshire Motor Co., Pittsfield, Mass.
Puritan Machine Co., Detroit, Mich.

**BERLIET**......
American Locomotive Co., Providence, R. I.

**BESSEMER**......
Robert M. Cutting Co., Chicago, Ill.

**BLACK CROW**......
Black Mfg. Co., Chicago, Ill.
Crow Motor Car Co., Elkhart, Ind.

**BLOMSTROM**......
Puritan Machine Co., Detroit, Mich.

**BORLAND**......
Puritan Machine Co., Detroit, Mich.

**BRIGGS-DETROITER**......
Puritan Machine Co., Detroit, Mich.

**BRINTELL**......
Puritan Machine Co., Detroit, Mich.

**BROWNIE KAR**......
Hinsdale Electrical Supply Co., Hinsdale, Ill.

**BROC (Electric)**......
Puritan Machine Co., Detroit, Mich.

**BRODESSER**......
Puritan Machine Co., Detroit, Mich.

**BRUSH**......
Standard Motor Parts Co., New Castle, Ind.
Dayton Auto Parts Co., New York City.
Jos. C. Gorey & Co., New York City.
Puritan Machine Co., Detroit, Mich.
Standard Motor Parts Co., Newcastle, Ind.
Maxwell Bros. Auto Salvage Co., St. Louis, Mo.
Southern Welding Co., Waco, Tex.
John Moore & Co., 2004 Broadway, New York City.

**BUFFALO (Electric)**......
Puritan Machine Co., Detroit, Mich.

**CALIFORNIA**......
California Auto Co., Los Angeles, Cal.
Puritan Machine Co., Detroit, Mich.

**CAMERON**......
Cameron Mfg. Co., New Haven, Conn.

**CAR-NATION**......
Auto Gear & Parts Co., Chicago, Ill.
Auto Parts Co., Chicago, Ill.
Car-Nation Motor Car Co., Detroit, Mich.
K. C. Auto Parts Co., Kansas City, Mo.
Puritan Machine Co., Detroit, Mich.

**CARTERCAR**......
Puritan Machine Co., Detroit, Mich.
Maxwell Bros. Auto Salvage Co., St. Louis, Mo.

Southern Welding Co., Waco, Tex.

**CARTHAGE......**
Puritan Machine Co., Detroit, Mich.

**CARHARTT......**
Auto Parts Co., Chicago, Ill.
Auto Gear & Parts Co., Chicago, Ill.
Jos. C. Gorey & Co., New York City.
Puritan Machine Co., Detroit, Mich.

**CARTHAGE......**
Puritan Machine Co., Detroit, Mich.

**CAVAC......**
Puritan Machine Co., Detroit, Mich.

**CENTURY......**
Puritan Machine Co., Detroit, Mich.

**CHADWICK......**
Chadwick Engineering Works, Pottstown, Pa.

**CHIEF......**
Chief Motor Co., Detroit, Mich.

**CINO......**
Haberer & Co., Cincinnati, O.
Puritan Machine Co., Detroit, Mich.

**CINCO......**
Puritan Machine Co., Detroit, Mich.

**CLARK......**
American Motors Parts Co., Indianapolis, Ind.
Clark Auto Co., Atlanta, Ga.
Clark Motor Car Co., Shelbyville, Ind.
Mercury Mfg. Co., Chicago, Ill.
Puritan Machine Co., Detroit, Mich.

**CLARK-CARTER......**
Robert M. Cutting Co., Chicago, Ill.
Cutting Motor Car Co., Waterloo, Ia.
Dauch Mfg. Co., Sandusky, O.
L. C. Erbes, 2654 West University Ave., St. Paul, Minn.
Puritan Machine Co., Detroit, Mich.

**CLEVELAND......**
Western Motor Car Co., Cleveland, O.
Elyria Belting & Mach. Co., Elyria, O.
Garford Motor Truck Co., Lima, O.
Western Motor Car Co., Cleveland, O.
Pacific Motor Car Exchange Co., N. Y. C.

**COATES GOSHEN......**
Coates Goshen Auto Co., Goshen, N. Y.
Joseph C. Gorey & Co., New York City.
Miller Car Co., Goshen, N. Y.

**COLBURN......**
Colburn Automobile Co., Denver, Col.
Erickson & Stalnaker, Denver, Col.
Puritan Machine Co., Detroit, Mich.

**COLBY......**
A. O. Smith, Milwaukee, Wis.

**COLLEY......**
Puritan Machine Co., Detroit, Mich.

**COLUMBIA......**
Columbia Auto Repair Co., Hartford, Conn.
Standard Motor Parts Co., Newcastle, Ind.
Pacific Motor Car Exchange Co., New York City.

**COLUMBUS (Electric)......**
New Columbus Buggy Co., Columbus, O.

**CONNERSVILLE—**
Puritan Machine Co., Detroit, Mich.

**CONTINENTAL......**
Puritan Machine Co., Detroit, Mich.
Pacific Motor Car Exchange Co., N. Y. C.

**CORBIN......**
Corbin Motor Vehicle Co., New Britain, Conn.
Pacific Motor Car Exchange Co., 221 West 53d St., New York City.

**CORBITT......**
Puritan Machine Co., Detroit, Mich.

**CORREJA......**
J. C. Gorey & Co., New York.
Auto Gear & Parts Co., Chicago, Ill.
Pacific Motor Car Exchange Co., N. Y. C.

**COURIER......**
Standard Motor Parts Co., New Castle, Ind.
Auto Gear & Parts Co., Chicago, Ill.
Puritan Machine Co., Detroit, Mich.
Southern Welding Co., Waco, Tex.

**COURIER-CLERMONT......**
Standard Motor Parts Co., New Castle, Ind.

**CRAIG-TOLEDO......**
A. W. Colter, Toledo, O.
Puritan Machine Co., Detroit, Mich.

**CRESCENT......**
Northway Auto Parts Co., Cincinnati, O.
Auto Gear & Parts Co., Chicago, Ill.
Puritan Machine Co., Detroit, Mich.

**CRICKET......**
Puritan Machine Co., Detroit, Mich.

**CROW......**
Auto Gear & Parts Co., Chicago, Ill.
Black Mfg. Co., Chicago, Ill.
Crow Motor Car Co., Elkhart, Ind.
Puritan Machine Co., Detroit, Mich.

**CROXTON......**
Auto Parts Co., Chicago, Ill.
Auto Gear & Parts Co., Chicago, Ill.
Puritan Machine Co., Detroit, Mich.

**CROXTON-KEETON......**
K. C. Auto Parts Co., Kansas City, Mo.
Puritan Machine Co., Detroit, Mich.
Pacific Motor Car Exchange Co., N. Y. C.

**CUTTING......**
Auto Gear & Parts Co., Chicago, Ill.
Harris Bros. Co., Chicago, Ill.
Puritan Machine Co., Detroit, Mich.

**DART......**
Puritan Machine Co., Detroit, Mich.
Auto Parts Co., Chicago, Ill.

**DAYTON......**
Puritan Machine Co., Detroit, Mich.

**DEAL......**
Auto Parts Co., Chicago, Ill.

**DEARBORN-DETROIT......**
Huron Motor Car Co., Dearborn, Mich.

**DEER-CLARK......**
Levene Motor Co., Philadelphia, Pa.

**DE LUXE......**
Puritan Machine Co., Detroit, Mich.

**DEMOTT......**
Puritan Machine Co., Detroit, Mich.

**DESCHAUM......**
Puritan Machine Co., Detroit, Mich.

**DE TAMBLE......**
American Motors Parts Co., Indianapolis, Ind.
Auto Gear and Parts Co., Chicago, Ill.
De Tamble Motors Co., Anderson, Ind.
Puritan Machine Co., Detroit, Mich.
Southern Welding Co., Waco, Tex.

**DETROIT-CHATUM......**
Puritan Machine Co., Detroit, Mich.

**DOLSON......**
Auto Gear & Parts Co., Chicago, Ill.

**DRAGON......**
Philadelphia Machine Works, Philadelphia, Pa.
Puritan Machine Co., Detroit, Mich.

**DUER......**
Chicago Coach & Carriage Co., Chicago, Ill.

**DUROCAR......**
Puritan Machine Co., Detroit, Mich.

**ECLIPSE......**
Kruegar Motor Car Co., Milwaukee, Wis.
Frank Toepfers' Sons, Milwaukee, Wis.

**ECONOMY......**
Auto Salvage Co., Kansas City, Mo.

**EDWARDS......**
Edwards Motor Car Co., Long Island City, N. Y.
Puritan Machine Co., Detroit, Mich.
Willys-Overland, Inc., Toledo, O.

**ELK......**
Puritan Machine Co., Detroit, Mich.

**ELMORE......**
Auto Parts Co., Chicago, Ill.
Auto Gear & Parts Co., Chicago, Ill.
Jos. C. Gorey & Co., New York City.
Standard Motor Parts Co., Newcastle, Ind.
Puritan Machine Co., Detroit, Mich.
Pacific Motor Car Exchange Co., N. Y. C.

**E. M. F.......**
Studebaker Corporation of America, Detroit, Mich.
Auto Parts Co., St. Louis, Mo.
Pacific Motor Car Exchange Co., 221 West 53d St., New York City.
Maxwell Bros. Auto Salvage Co., St. Louis, Mo.
Southern Welding Co., Waco, Tex.
Chadwick Eng. Works, Pottstown, Pa.

**EVERETT......**
Holt-Chandler, Long Island City, N. Y.
Auto Gear & Parts Co., Chicago, Ill.
Jos. C. Gorey & Co., New York City.
Standard Motors Parts Co., Newcastle, Ind.
Auto Parts Co., St. Louis, Mo.
Pacific Motor Car Exchange Co., N. Y. C.

**EVERITT......**
Maxwell Motor Car Sales Corp., New Castle, Ind.
Puritan Machine Co., Detroit, Mich.

**EWING......**
Jos. C. Gorey, New York.
L. E. Ewing, Cleveland, O.

Puritan Machine Co., Detroit, Mich.
Pacific Motor Car Exchange Co., N. Y. C.

**F. A. L......**
Auto Parts Co., Chicago, Ill.
Auto Gear & Parts Co., Chicago, Ill.
K. C. Auto Parts Co., Kansas City, Mo.
Puritan Mach. Co., Detroit, Mich.

**FAWICK......**
Waukesha Motor Co., Waukesha, Wis.

**FIRESTONE COLUMBUS......**
Auto Gear & Parts Co., Chicago, Ill.
New Columbus Buggy Co., Columbus, O.
Puritan Machine Co., Detroit, Mich.
Auto Salvage Co., Inc., Kansas City, Mo.

**FINDLAY......**
L. E. Ewing, Cleveland, O.

**FLANDERS—**
Auto Gear & Parts Co., Chicago, Ill.
Puritan Machine Co., Detroit, Mich.
Standard Motor Parts Co., Newcastle, Ind.
Studebaker Corp. of America, Detroit, Mich.
Pacific Motor Car Exchange Co., 221 West 53d St., New York City.
Auto Parts Co., St. Louis, Mo.
Southern Welding Co., Waco, Tex.

**FULLER......**
Jackson Auto Co., Jackson, Mich.

**GAETH......**
Gaeth Motor Car, Cleveland, O.

**GARFORD......**
Elyria Belting and Machinery Co., Elyria, O.
Garford Motor Truck Co., Lima, O.
Puritan Machine Co., Detroit, Mich.
Pacific Motor Car Exchange Co., 221 West 53d St., New York City.

**G. J. G.......**
Puritan Machine Co., Detroit, Mich.
Jos. C. Gorey & Co., New York City.
Pacific Motor Car Exchange Co., N. Y. C.

**GLEASON......**
Bauer Machine Works, Kansas City, Mo.

**GRABOWSKY......**
Puritan Machine Co., Detroit, Mich.
Jos. C. Gorey & Co., New York City.
Pacific Motor Car Exchange Co., N. Y. C.

**GRAMM......**
Garford Motor Truck Co., Lima, O.
Puritan Machine Co., Detroit, Mich.

**GRAMM-LOGAN......**
Garford Motor Truck Co., Lima, O.

**GREAT SMITH......**
Bauer Machine Works, Kansas City, Mo.
Smith Automobile Co., Topeka, Kan.

**GREAT WESTERN......**
Auto Gear and Parts Co., Chicago, Ill.
Great Western Auto Co., Peru, Ind.
Maxwell Bros. Auto Salvage Co., St. Louis, Mo.

**GREEN DRAGON......**
Auto Salvage Co., Inc., Kansas City, Mo.

**GROUT......**
Puritan Machine Co., Detroit, Mich.
Red Arrow Auto Co., Orange, Mass.

**HALLIDAY......**
Auto Gear & Parts Co., Chicago, Ill.
Maxwell Bros. Auto Salvage Co., St. Louis, Mo.

**HART-KRAFT......**
Quincy Engine Co., Chambersburg, Pa.
Petrie & Morganthal, Greencastle, Pa.

**HAVERS......**
Puritan Machine Co., Detroit, Mich.
Gillette Motors Co., Mishawaka, Ind.
Jos. C. Gorey & Co., New York City.

**HENDERSON......**
American Motors Parts Co., Indianapolis, Ind.
Auto Gear & Parts Co., Chicago, Ill.
Auto Parts Co., Chicago, Ill.
Buda Co., Harvey, Ill.
Henderson Motor Car Co., Detroit, Mich.
Puritan Machine Co., Detroit, Mich.
Maxwell Bros. Auto Salvage Co., St. Louis, Mo.

**HENRY......**
A. O. Smith Co., Milwaukee, Wis.
Auto Gear & Parts Co., Chicago, Ill.
Jos. C. Gorey & Co., New York City.
Muskegon Auto Co., Muskegon, Mich.
Puritan Machine Co., Detroit, Mich.

**HERRESHOFF......**
American Motor Parts Co., Indianapolis, Ind.
Jos. C. Gorey & Co., New York City.
Levene Motor Co., Philadelphia, Pa.
Puritan Machine Co., Detroit, Mich.

**HEWITT......**
- International Motor Co., New York.
- Pacific Motor Car Exchange Co., N. Y. C.

**HOLSMAN......**
- Mercury Mfg. Co., Chicago, Ill.

**HOUPT......**
- New Departure Mfg. Co., Bristol, Conn.

**IMPERIAL......**
- Auto Gear & Parts Co., Chicago, Ill.
- Imperial Automobile Co., Detroit, Mich.

**INDIANA......**
- Puritan Machine Co., Detroit.

**JENKINS......**
- Puritan Machine Co., Detroit, Mich.

**JEWELL......**
- Croxton Motor Co., Washington, Pa.

**JOHNSON......**
- Johnson Service Co., Milwaukee, Wis.

**KEETON......**
- Auto Parts Co., Chicago, Ill.
- Car-Nation Motor Car Co., Detroit, Mich.
- Keeton Motor Car Co., Detroit, Mich.
- Puritan Machine Co., Detroit, Mich.

**KELLY SPRINGFIELD......**
- Puritan Machine Co., Detroit, Mich.

**KELSEY......**
- Autoparts & Repair Co., Springfield, Mass.
- Kelsey Motor Co., Hartford, Conn.

**KERMATH......**
- Puritan Machine Co., Detroit, Mich.

**KLINE......**
- Puritan Machine Co., Detroit, Mich.
- Auto Parts Co., St. Louis, Mo.
- Pacific Motor Car Exchange Co., N. Y. C.

**KNOX......**
- Alco Service Co., Philadelphia, Pa.
- Pacific Motor Car Exchange Co., N. Y. C.
- Maxwell Bros. Auto Salvage Co., St. Louis, Mo.

**KOMET......**
- Keith Bros., Elkhart, Ind.

**KRALL......**
- Puritan Machine Co., Detroit, Mich.

**KRIT......**
- Auto Gear & Parts Co., Chicago, Ill.
- Auto Parts Co., Chicago, Ill.
- Krit Motor Car Co., Detroit, Mich.
- Puritan Machine Co., Detroit, Mich.
- Motor Corp., 1309 Race St., Phila., Pa.
- Maxwell Bros. Auto Salvage Co., St. Louis, Mo.
- Southern Welding Co., Waco, Tex.

**LANSDEN......**
- Lansden Co., Inc., Brooklyn, N. Y.

**LEWIS......**
- American Motor Parts Co., Indianapolis, Ind.

**LEXON......**
- Puritan Machine Co., Detroit, Mich.

**LION......**
- Auto Parts Co., Chicago, Ill.
- Lion Motor Parts Co., Philadelphia, Pa.
- American Motors Parts Co., Indianapolis, Ind.
- K. C. Auto Parts Co., Kansas City, Mo.
- Levene Motor Car Co., Philadelphia, Pa.
- Puritan Machine Co., Detroit, Mich.

**LITTLE FOUR......**
- Auto Gear & Parts Co., Chicago, Ill.
- Chevrolet Motor Co., Flint, Mich.

**LITTLE SIX......**
- Puritan Machine Co., Detroit, Mich.

**LOGAN......**
- Garford Motor Truck Co., Lima, O.
- Gramm Motor Co., Lima, O.

**LOZIER (Old)......**
- Philadelphia Machine Works, Philadelphia, Penn.
- Puritan Machine Co., Detroit, Mich.
- Pacific Motor Car Exchange Co., 221 West 53d St., New York City.

**L. P. C.......**
- Auto Parts Co., Chicago, Ill.
- American Motors Parts Co., Indianapolis, Ind.

**MARATHON......**
- Marathon Service Co., Nashville, Tenn.
- Puritan Machine Co., Detroit, Mich.
- Pacific Motor Car Exchange Co., 221 West 53d St., New York City.

**MARION......**
- American Motors Parts Co., Indianapolis, Ind.
- Auto Gear & Parts Co., Chicago, Ill.
- Auto Parts Co., Chicago, Ill.
- Joseph C. Gorey & Co., New York City.
- K. C. Auto Parts Co., Kansas City, Mo.
- V. A. Longaker Co., Indianapolis, Ind.
- Marion Auto Service Co., New York City.
- Puritan Machine Co., Detroit, Mich.
- Stutz Motor Car Co., 2450 Michigan Ave., Chicago, Ill.
- Pacific Motor Car Exchange Co., 221 West 53d St., New York City.
- Automobile Mechanics Corp., 221 West 53d St., New York City.

**MATHESON......**
- Frank F. Matheson Co., Wilkesbarre, Pa.
- Pacific Motor Car Exchange Co., 221 West 53d St., New York City.

**McINTYRE......**
- Puritan Machine Co., Detroit, Mich.

**MARRON......**
- Puritan Machine Co., Detroit, Mich.

**MARQUETTE......**
- Puritan Machine Co., Detroit, Mich.
- Pacific Motor Car Exchange Co., N. Y. C.

**MARVEL......**
- Puritan Machine Co., Detroit, Mich.

**MATHER......**
- Puritan Machine Co., Detroit, Mich.

**MAYTAG-MASON......**
- Mason Motor Car Co., Detroit, Mich.
- Puritan Machine Co., Detroit, Mich.

**MASON......**
- Mason Motor Car Co., Detroit, Mich.
- Puritan Machine Co., Detroit, Mich.
- L. C. Erbes, 2654 W. University Ave., St. Paul, Minn.

**MERCHANT......**
- Puritan Machine Co., Detroit, Mich.

**MIDDLEBY......**
- H. Goldberg, Philadelphia, Pa.
- A. J. Levengood, 153 N. 4th St., Reading, Pa.
- Puritan Machine Co., Detroit, Mich.

**MILLER......**
- Puritan Machine Co., Detroit, Mich.
- Auto Gear & Parts Co., Chicago, Ill.

**MILWAUKEE......**
- Harris Bros., Chicago Ill.

**MONARCH......**
- Puritan Machine Co., Detroit, Mich.

**MORA......**
- Philadelphia Mach. Works, Phila., Pa.
- Jos. C. Gorey & Co., New York City.
- Pacific Motor Car Exchange, N. Y. C.

**MOYER......**
- Puritan Machine Co., Detroit, Mich.
- Auto Gear & Parts Co., Chicago, Ill.

**MAXWELL BRISCOE......**
- Standard Motor Parts Co., Newcastle, Ind.
- Pacific Motor Car Exchange Co., 221 West 53d St., New York City.

**MAXWELL (Old)......**
- Auto Gear & Parts Co., Chicago, Ill.
- Puritan Machine Co., Detroit, Mich.
- Standard Motor Parts Co., Newcastle, Ind.
- Pacific Motor Car Exchange Co., 221 West 53d St., New York City.

**METEOR......**
- Auto Gear & Parts Co., Chicago, Ill.
- Meteor Motor Car Co., Piqua, O.
- Puritan Machine Co., Detroit, Mich.

**MICHIGAN......**
- Auto Gear & Parts Co., Chicago, Ill.
- Auto Parts Co., Chicago, Ill.
- Dauch Mfg. Co., Sandusky, O.
- Joseph C. Gorey & Co., New York City.
- K. C. Auto Parts Co., Kansas City, Mo.
- Michigan Motor Car Co., Detroit, Mich.
- Philadelphia Mach. Works, Phila., Pa.
- Puritan Machine Co., Detroit, Mich.

**MIDLAND......**
- Auto Gear & Parts Co., Chicago, Ill.
- Auto Parts Co., Chicago, Ill.
- K. C. Auto Parts Co., Kansas City, Mo.
- Levene Motor Co., Philadelphia, Pa.
- Puritan Machine Co., Detroit, Mich.
- Midland Motor Co., Philadelphia, Pa.
- Maxwell Bros. Auto Salvage Co., St. Louis, Mo.

**MIER......**
- Mier Car. & Buggy Co., Ligonier, Ind.

**NANCE......**
- Puritan Machine Co., Detroit, Mich.
- Jos. C. Gorey & Co., New York City.

**NORTHERN......**
- Puritan Machine Co., Detroit, Mich.
- Auto Parts Co., Chicago, Ill.

**NORTH WESTERN......**
- Puritan Machine Co., Detroit, Mich.

**NYBERG......**
- Levene Motor Co., Philadelphia, Pa.
- American Motors Parts Co., Indianapolis, Ind.
- Auto Gear & Parts Co., Chicago, Ill.
- Auto Parts Co., Chicago, Ill.
- V. A. Longaker Co., Indianapolis, Ind.
- Puritan Machine Co., Detroit, Mich.

**OHIO......**
- A. O. Smith Co., Milwaukee, Wis.
- Auto Gear & Parts Co., Chicago, Ill.
- Northway Auto Parts & Sales Co., Cincinnati, O.
- Puritan Machine Co., Detroit, Mich.
- Auto Parts Co., St. Louis, Mo.
- Pacific Motor Car Exchange Co., N. Y. C.
- Maxwell Bros. Auto Salvage Co., St. Louis, Mo.

**OMAHA......**
- A. O. Smith Co., Milwaukee, Wis.
- Auto Gear & Parts Co., Chicago, Ill.
- Puritan Machine Co., Detroit, Mich.

**OLIVER......**
- Oliver Motor Truck Co., Detroit, Mich.
- Puritan Machine Co., Detroit, Mich.

**ORIENT......**
- Metz Co., Waltham, Mass.

**ORSON......**
- Drenco Machine Co., New York.
- Pacific Motor Car Exchange Co., N. Y. C.

**OSWALD......**
- Auto Salvage Co., Inc., Kansas City, Mo.

**OTTO-MOBILE......**
- Holly Motor Co., Mt. Holly, N. J.

**OVERHOLT......**
- A. O. Smith Co., Milwaukee, Wis.

**OWEN......**
- Puritan Machine Co., Detroit, Mich.

**PACKERS......**
- Puritan Machine Co., Detroit, Mich.
- Pacific Motor Car Exchange Co., N. Y. C.

**PAIGE (Three-Cylinder)......**
- Puritan Machine Co., Detroit, Mich.

**PALMER SINGER......**
- Auto Gear & Parts Co., Chicago, Ill.
- Drenco Machine Co., New York City.
- Puritan Machine Co., Detroit, Mich.
- Singer Motor Co., New York City.
- A. O. Smith, Milwaukee, Wis.
- Pacific Motor Car Exchange Co., 221 West 53d St., New York City.

**PANHARD......**
- L. Babel, 371 East 29th St., Chicago, Ill.
- Pacific Motor Car Exchange Co., 221 West 53d St., New York City.

**PAULDING......**
- Anchor Motor Car Co., St. Louis, Mo.

**PARRY......**
- Motor Car Mfg. Co., Indianapolis, Ind.
- Auto Gear & Parts Co., Chicago, Ill.
- Pathfinder Co., Indianapolis, Ind.
- Auto Parts Co., St. Louis, Mo.
- Southern Welding Co., Waco, Tex.

**PIERCE-RACINE......**
- J. I. Case Threshing Machine Co., Racine, Wis.
- Pierce Motor Co., Racine, Wis.
- Puritan Machine Co., Detroit, Mich.

**PEABODY......**
- Puritan Machine Co., Detroit, Mich.

**PENN......**
- Buda Co., Harvey, Ill.
- Pennsylvania Central Auto Supply Co., Philadelphia, Pa.

**PERU....**
- Puritan Machine Co., Detroit, Mich.

**PETREL......**
- Filer & Stowell Co., Milwaukee, Wis.

**PITTSBURG......**
- Chester Engineering Co., Chester, Pa.

**PIONEER......**
- Pioneer Car Mfg. Co., Oklahoma City, Okla.

**POPE-HARTFORD......**
- Boulevard Motor Co., Cambridge, Mass.
- Hartford Motor Car Co., Hartford, Conn.
- Puritan Machine Co., Detroit, Mich.
- J. Rosenfeld, 521 6th St., South Boston.
- Walker & Barkman Mfg. Co., Hartford, Conn.
- Pacific Motor Car Exchange Co., 221 West 53d St., New York City.
- Maxwell Bros. Auto Salvage Co., St. Louis, Mo.
- Southern Welding Co., Waco, Tex.

**POPE-TOLEDO......**
- Auto Salvage Parts Co., Chicago, Ill.
- Pacific Motor Car Exchange Co., N. Y. C.
- Maxwell Bros. Auto Salvage Co., St. Louis, Mo.
- Southern Welding Co., Waco, Tex.

**POSS—**
- Puritan Machine Co., Detroit, Mich.
- Auto Parts Co., St. Louis, Mo.

**POPE TRIBUNE......**
- Hartford Motor Car Co., Hartford, Conn.

**PRATT-ELKHART......**
Elkhart Carriage & Motor Car Co., Elkhart, Ind.

**PREMIER......**
American Motor Parts Co., Indianapolis, Ind.

**PUNGS-FINCH......**
Pungs-Finch Auto & Gas Engine Co., Detroit, Mich.
Puritan Machine Co., Detroit, Mich.

**QUEEN......**
Puritan Machine Co., Detroit, Mich.
Auto Parts Co., Chicago, Ill.

**RANDOLPH......**
Auto Parts Co., Chicago, Ill.
De Kalb Wagon Co., De Kalb, Ill.
Puritan Machine Co., Detroit, Mich.
Quincy Engine Co., Chambersburg, Pa.

**RAINIER......**
Puritan Machine Co., Detroit, Mich.
Garford Motor Truck Co., Lima, O.
Pacific Motor Car Exchange Co., 221 West 53d St., New York City.

**RAPID......**
Puritan Machine Co., Detroit, Mich.
Auto Parts Co., St. Louis, Mo.

**RAYFIELD......**
Holms Garage, Danville, Ill.

**READING......**
H. Goldberg, Reading, Penn.

**REED......**
Puritan Machine Co., Detroit, Mich.

**RELIABLE-DAYTON......**
Puritan Machine Co., Detroit, Mich.

**R. C. H.......**
Auto Gear & Parts Co., Chicago, Ill.
Burt Motor Car Co., Los Angeles, Çal.
Jos. C. Gorey Co., New York City.
Philadelphia Machine Works, Phila, Pa.
Puritan Machine Co., Detroit, Mich.
R. C. H. Corp., Detroit, Mich.
Auto Parts Co., St. Louis, Mo.
Pacific Motor Car Exchange Co., 221 West 53d St., New York City.

**RELIANCE......**
Puritan Machine Co., Detroit, Mich.

**REPUBLIC......**
Republic Motor Car Co., Youngstown, O.

**RICKETTS......**
Ricketts Auto Works, Detroit, Mich.

**RIDER-LEWIS......**
Puritan Machine Co., Detroit, Mich.
Auto Parts Co., Chicago, Ill.
Service Motor Co., Philadelphia, Pa.
Levene Motor Co., Philadelphia, Pa.
V. A. Longaker & Co., Indianapolis, Ind.

**ROYAL TOURIST......**
Puritan Machine Co., Detroit Mich.

**SAMPSON......**
Auto Gear & Parts Co., Chicago, Ill.
Puritan Machine Co., Detroit, Mich.
Standard Motor Parts Co., Newcastle, Ind.
Pacific Motor Car Exchange Co., 221 West 53d St., New York City.

**SANDUSKY......**
Standard Motor Parts Co., Sandusky, O.

**SCHACHT......**
General Auto Repairs Co., Cincinnati, O.
Auto Gear & Parts Co., Chicago, Ill.
Puritan Machine Co., Detroit, Mich.

**SELDEN......**
Auto Gear & Parts Co., Chicago, Ill.
Puritan Machine Co., Detroit, Mich.
Maxwell Bros. Auto Salvage Co., St. Louis, Mo.
Pacific Motor Car Exchange Co., N. Y. C.
Jos. C. Gorey & Co., New York.

**SCRIPPS-BOOTH (Cycle Car)......**
Puritan Machine Co., Detroit, Mich.

**SIBLEY......**
Sibley Motor Car Co., Detroit, Mich.

**SOMMER......**
Sommer Motor Co., Detroit, Mich.

**S. G. V.......**
N. J. Machinery Co., Newark, N. J.

**SPAULDING......**
Puritan Machine Co., Detroit, Mich.

**SPEEDWELL......**
Green Engineering Co., Dayton, O.

**SPRINGFIELD......**
Haas Elec. & Mfg. Co., Springfield, Ill.

**SOUTHERN......**
Puritan Machine Co., Detroit, Mich.
Southern Auto & Equipment Co., Atlanta, Ga.

**SPHINX......**
Auto Gear & Parts Co. Chicago, Ill.
Victor Motor Co., York, Pa.

**STAVER......**
Auto Gear & Parts Co., Chicago, Ill.
Puritan Machine Co., Detroit, Mich.
A. O. Smith Co., Milwaukee, Wis.
Auto Parts Co., St. Louis, Mo.
Maxwell Bros. Auto Salvage Co., St. Louis, Mo.

**STEVENS-DURYEA......**
Walk Hill Garage, Mattapan, Mass.
Pacific Motor Car Exchange Co., 221 West 53d St., New York City.
Maxwell Bros. Auto Salvage Co., St. Louis, Mo.

**STODDARD-DAYTON......**
Auto Gear & Parts Co., Chicago, Ill.
Dayton Auto Parts Co., New York City.
Puritan Machine Co., Detroit, Mich.
Standard Motor Parts Co., Newcastle, Ind.
Auto Parts Co., St. Louis, Mo.
Pacific Motor Car Exchange Co., 221 West 53d St., New York City.
Maxwell Bros. Auto Salvage Co., St. Louis, Mo.

**STANDARD SIX......**
St. Louis Car Co., St. Louis, Mo.

**STAR......**
Mier Car. and Buggy Co., Ligonier, Ind.

**STERLING......**
Keith Bros., Elkhart, Ind.

**SUBURBAN......**
Puritan Machine Co., Detroit, Mich.
Auto Gear & Parts Co., Chicago, Ill.

**SULTAN......**
Jos. C. Gorey, New York.

**THOMAS......**
Auto Gear & Parts Co., Chicago, Ill.
W. H. Jahns, 908 W. Pico St., Los Angeles, Cal.
Puritan Machine Co., Detroit, Mich.
J. Rosenfeld, 521 6th St. South Boston.
E. R. Thomas Motor Car Co., Buffalo, N. Y.
Auto Parts Co., St. Louis, Mo.
Pacific Motor Car Exchange, 221 West 53d St., New York City.
Maxwell Bros. Auto Salvage Co., St. Louis, Mo.
Southern Welding Co., Waco, Tex.

**TINCHER......**
Chicago Coach & Car. Co., Chicago, Ill.

**TOURINE......**
Jos. C. Gorey, New York.

**TOURIST......**
W. J. Burt Motor Co., Los Angeles, Cal.

**TRAVELER......**
Traveler Auto Co., Evansville, Ind.

**TRUMBULL......**
Levene Motor Co., Philadelphia, Pa.

**TWOMBLY......**
Driggs-Seabury Ordnance Co., Sharon, Pa.

**VAN......**
L. C. Erbes, 2654 W. University Ave., St. Paul, Mich.

**VAN DYKE......**
Puritan Machine Co., Detroit, Mich.

**VICTOR THOMAS DETROIT......**
Anchor Motor Car Co., St. Louis, Mo.
Puritan Machine Co., Detroit, Mich.
Pacific Motor Car Exchange Co., 221 West 53d St., New York City.

**VIRGINIAN......**
Auto Gear & Parts Co., Chicago, Ill.

**WAGENHALLS......**
Riverside Mach. Depot, Detroit, Mich.

**WAHL......**
Harris Bros. Co., Chicago, Ill.
Barley Mfg. Co., Streator, Ill.
Puritan Machine Co., Detroit, Mich.

**WALTERS......**
Auto Gear & Parts Co., Chicago, Ill.

**WALTHAM ORIENT......**
Metz Co., Waltham, Mass.

**WARREN......**
Puritan Machine Co., Detroit, Mich.
Auto Gear & Parts Co., Chicago, Ill.
Jos. C. Gorey & Co., New York City.
Auto Parts Co., St. Louis, Mo.
Maxwell Bros. Auto Salvage Co., St. Louis. Mo.

**WASHINGTON......**
Puritan Machine Co., Detroit, Mich.

**WAYNE......**
Puritan Machine Co., Detroit, Mich.
Maxwell Bros. Auto Salvage Co., St. Louis, Mo.

**WAVERLY (Electric)......**
V. A. Longaker Co., Indianapolis Ind.

**WELCH-DETROIT......**
Puritan Machine Co., Detroit, Mich.
Maxwell Bros. Auto Salvage Co., St. Louis, Mo.

**WELCH-MARQUETTE......**
Oldsmobile Co., Chicago, Ill.

**WELCH-PONTIAC......**
Puritan Machine Co., Detroit, Mich.

**WHITING......**
Chevrolet Motor Co. of Mich., Flint, Mich.
Auto Gear & Parts Co., Chicago, Ill.
Puritan Machine Co., Detroit, Mich.

**WOODWORTH......**
Puritan Machine Co., Detroit, Mich.

**YALE......**
Consolidated Mfg. Co., Toledo, O.
Brown Lipe Gear Co., Syracuse, N. Y.

**ZIMMERMAN......**
Auto Gear & Parts Co., Chicago, Ill.

**ZIPP......**
H. A. Huebotter, Davenport, Iowa.
Bauer Medicine Works, Kansas City, Mo.

# FAMOUS PERLMAN RIM SUIT DISMISSED BY COURT

The famous suit of the Perlman Rim Corporation against the Firestone Tire and Rubber Co., claiming infringement of the Perlman demountable rim patents, has been dismissed by Judge Hand on the motion of counsel for the plaintiff.

The court dismissed the suit without prejudice to either party and ordered that all exhibits in connection with the case be impounded and that all testimony taken should be kept available for use in case of further litigation among the parties to the suit or their representatives.

It is understood that as matters rest now, the Perlman corporation will have to bring further suits if it wishes to substantiate its patent and that the monopoly under the patent is now at an end.

Litigation over the Perlman patent, which is No. 1,052,270, was first started in 1913, when L. H. Perlman filed suit against the Standard Welding Co., charging infringement. Judge Hunt, sitting in the U. S. District Court for the southern district of New York, handed down a decision in Perlman's favor Aug. 18, 1915. An appeal was taken, but the U. S. Circuit Court of Appeals of the second circuit upheld the decision in February, 1916, and an injunction prohibiting further manufacture was issued March 8, 1916.

The suit that was recently dismissed was brought against the Firestone Tire and Rubber Co. in February of the present year in the U. S. district court in the southern district of New York, and it is understood that the defendants had much new evidence that would have had an important bearing on the case when the suit was called off.

In the spring of 1916 the Perlman Rim Corporation was formed to manufacture demountable rims under the Perlman patents and a large factory was established at Jackson, Mich., where the production is going on at the rate of 4000 rims per day. It is stated that L. H. Perlman, the principal, in organizing the company has sold out his interests.

# Activities of Prominent Men of the Industry

## Resignations, Promotions and Other Changes in Personnel of Motor Vehicle Manufacturing and Merchandising Companies and Allied Businesses

**Charles Clifton**, head of the Pierce-Arrow Motor Car Co., was re-elected president of the National Automobile Chamber of Commerce. Over 90 companies were represented.

**Guy E. Norwood** has been appointed president of the Republic Motor Co. Mr. Norwood resigned as secretary of the B. F. Goodrich Co. He has had many years of valuable experience in important executive positions with the Diamond and Goodrich companies. His appointment is another important step in the development of expansion plans that have followed as a result of the discovery of the Prodium process for prolonging the life of tires. Mr. Norwood has taken Mr. Robinson's place, who has retired, but will continue as chairman of the board of directors.

**William J. LaCasse** is now Pacific coast supervisor for the Maxwell Motor Sales Corp., with headquarters in San Francisco. He will have the distribution of the Maxwell cars throughout the West, including practically nine states. Mr. La Casse is one of the youngest automobile men on the coast.

**Clinton B. Amorous** has resigned as assistant sales manager to E. A. Travis of the Locomobile Co. of America to accept a position with the Parish Manufacturing Co. of Detroit as assistant to C. C. Ostrom, manager. The company is one of the country's largest makers of automobile frames.

**E. H. Brandt** has been appointed western sales manager for the Ajax Rubber Co., Inc. He has been with the Ajax company for two years. He also has served as sales manager for the old Maxwell-Briscoe Motor Co. Mr. Brandt will have charge of the territory west of a line along the eastern boundaries of Michigan, Indiana, Illinois, Missouri, Arkansas and Texas. His headquarters will continue to be in New York.

**D. B. McCoy** has been engaged as advertising manager of the Olds Motor Works. Mr. McCoy was with the Oakland Motor Car Co. for a number of years and previously was assistant manager of the Kansas City branch of the Buick Motor Co.

**A. L. A. Spetler**, who has been manager of the Michigan branch of the Michigan Oldsmobile Co., wholesale distributors of Oldsmobiles for several states, has been made division sales manager of the Olds Motor Works, under the general sales manager. His territory comprises the central states and extends from Ohio to Colorado and from the lakes to the gulf. He will make his headquarters at Lansing, Mich.

**George H. Houston** succeeds Edward M. Hagar as president of the Simplex Automobile Co., a subsidiary of the Wright-Martin Aircraft Corp. C. B. Hubbard was elected vice president, succeeding M. M. Metcalf. H. M. Crane was re-elected as the other vice president and W. H. Nixon as secretary-treasurer.

Charles Clifton, President Pierce-Arrow Motor Car Corp., Re-Elected Head of N. A. C. C.

**N. A. Wolcott** has been elected president of the Packard Electric Co., Warren, O. For the past 14 years he has held the position of treasurer with the company. Other officers were: Vice president, Charles Fillius; secretary, R. E. Gorton. Mr. Wolcott will continue to act as treasurer.

**W. E. Bertsch** has been appointed publicity director of the Elgin Motor Car Corp., Chicago, Ill.

Horace De Lisser of Ajax Rubber Co., Chairman of National Automotive Committee.

**Philip B. Gale**, general manager of the Hartford Machine Screw Co., has been elected president of the Standard Screw Co., Hartford, Conn. He succeeds W. B. Pearson, who recently died in Chicago.

**Horace De Lisser**, chairman of the board of directors of the Ajax Rubber Co., proposed to Chairman Simmons of the Finance Committee of the U. S. Senate that a general levy of one-half of one per cent. of the gross sales made by every business in the country, and to include fees and other emoluments received by professional men, be made as a means of raising the necessary $1,000,000,000 instead of the complex and intricate method of taxation now being considered.

**The Kaufmann-Morris Co.**, eastern distributors of the Premier Motor Co. of Indianapolis, and American representatives of the Peugeot automobile, have leased the four-story and basement building at the northeast corner of Broadway and 57th street, New York City, and will use it as a salesroom and service station.

**James A. Braden**, formerly director of publicity of the Northern Ohio Traction and Light Co., and prior to that time advertising manager of the Diamond Rubber Co., has been appointed director of publicity and advertising of the Standard Parts Co., Cleveland, O.

**Hugh Chalmers**, president of the Chalmers Motor Car Co. of Detroit, was one of the speakers at the convention of the Associated Advertising clubs, held in St. Louis, June 3 to 7.

**W. G. Clay** has been appointed sales manager of the Abbott Corporation. He was formerly assistant sales manager of the company and succeeded Alfred Thompson, who was elected president of the company to succeed Guy Morgan, who resigned.

**George O. Simpson** has been appointed manager of the Kansas City branch of the Goodrich Rubber Co. He has been manager of the Philadelphia branch for seven years. He succeeds F. A. Oberheu.

**C. E. Toole** has been appointed in charge of the service organization of the Wetmore-Quinn Co. Mr. Toole was formerly production manager of the Champion Motors Co. of Fulton, Ill.

**E. B. Turrill** has resigned from the advertising department of the Saxon Motor Car Corp. to join the American Red Cross ambulance corps. He had been with the Saxon company for three years.

**John D. Carmody**, Toledo, is now covering Nebraska and North and South Dakota for the Champion Spark Plug Co., Toledo. He was formerly with the U. S Rubber Co., Chicago.

L. W. Swords, Vice President Wallace C. Hood Service Bureau, Detroit, Mich.

**L. W. Swords**, vice president and supervisor of sales of the Wallace C. Hood Service Bureau, Detroit, announces the recent appointment of the following representatives: W. L. Smith, who has supervision over all of the New England territory; E. E. Sheldon, the entire eastern territory outside of New England; L. H. Oatman, Northwestern Pennsylvania and Northeastern Ohio, and Edward A. Scheu, the central west and the entire western states to the Pacific coast.

**Victor Launeau**, former research engineer for the Buick Motor Car Co., has been appointed chief automobile designing engineer of the Pan Motor Car Co., St. Cloud, Minn.

**W. H. Tanneyhill** has been appointed assistant general sales manager by the Scripps-Booth Corp., Detroit, having been promoted from manager of the central district.

**F. W. Hughes**, formerly Detroit resident engineer for the Covert Gear Co., has become production manager of the Indiana Motor Truck Co., Marion, Ind.

**Walter P. Hatch** resigned as the vice president and sales manager of the Ingram-Hatch Motor Corp. at the annual meeting at Rosebank, N. Y., recently, and Nelson P. Gutelius was appointed sales and advertising manager. The following officers were elected: President, Joseph W. Cody, New York City; vice president, Joseph A. Ingram, Rosebank, N. Y.; treasurer, James J. McCullum, New York City; secretary, John T. Oates, Brooklyn.

**John N. Willys**, president of the Willys-Overland Co., has turned his new yacht over to the government. It was in an unfinished state and will be completed after plans of the naval architects to fit it for the special service into which it will be registered.

**Ralph E. Trout**, formerly purchasing agent of the Pullman Motor Car Co., has been appointed to a similar position with the Victor Motor Co., York, Penn.

Frank M. Eldredge, Elected Secretary and Treasurer of the Wallace C. Hood Service Bureau.

**Theodore F. Drews**, assistant manager of the A. B. C. Starter Co., Detroit, Mich., for the past 14 months, is one of the best known of the younger men in automobile industrial circles in Detroit.

He made his entry into the business in the service and repair department of the Ford Motor Company at Detroit. He was later appointed traffic manager for the Hupmobile, in which capacity he also handled both factory and office ends of the Hupp service department. He later became assistant general manager of the R. C. H. Corporation after it was taken over by Mr. Chas. C. Sieder, who at present is president and general manager of the A. B. C. Starter Co.

**M. A. Pollock** has been appointed manager of the Bridgeport branch of the Locomobile Company of America, which includes the sales and service organization of the State of Connecticut and the western part of Massachusetts. He came to the Locomobile company two years ago and since then was employed in the service department of the New York branch of the company.

Theodore F. Drews, Assistant Manager of the A. B. C. Starter Co., Detroit, Mich.

**S. J. Green**, who for some years has been western district general manager for the American Everready Co., has been made general sales manager for the Detroit Battery Co., manufacturers of the Detroit storage batteries.

**A. W. Mickim**, formerly advertising manager for the Liberty Motor Car Co., has joined the staff of the Carl M. Green Advertising Agency.

**R. E. Winans** has been appointed service manager for the Harroun Motor Corp. Mr. Winans was formerly connected with the Paige-Detroit Motor Car Co. as service manager.

**Walter C. Keys** has been appointed assistant to J. G. Utz, director of engineering for the Standard Parts Co., Cleveland, O. For several years he was with the Cadillac Motor Car Co.

**H. L. Dyer** has been appointed special representative for the Scripps-Booth in the southern district, with headquarters at Atlanta, Ga.

**Stephen D. Briggs**, representing the Hupp Motor Car Co., has returned from London. Mr. Briggs will return to his old position as branch manager of the Northwest Hupmobile Co. at Minneapolis, Minn.

**William B. Levey** has resigned as purchasing agent of the Service Motor Supply Co., Chicago. Mr. Levey is well known to the industry, having been buyer of the Auto Parts Co. and connected with the American Electric Car Co., both of Chicago.

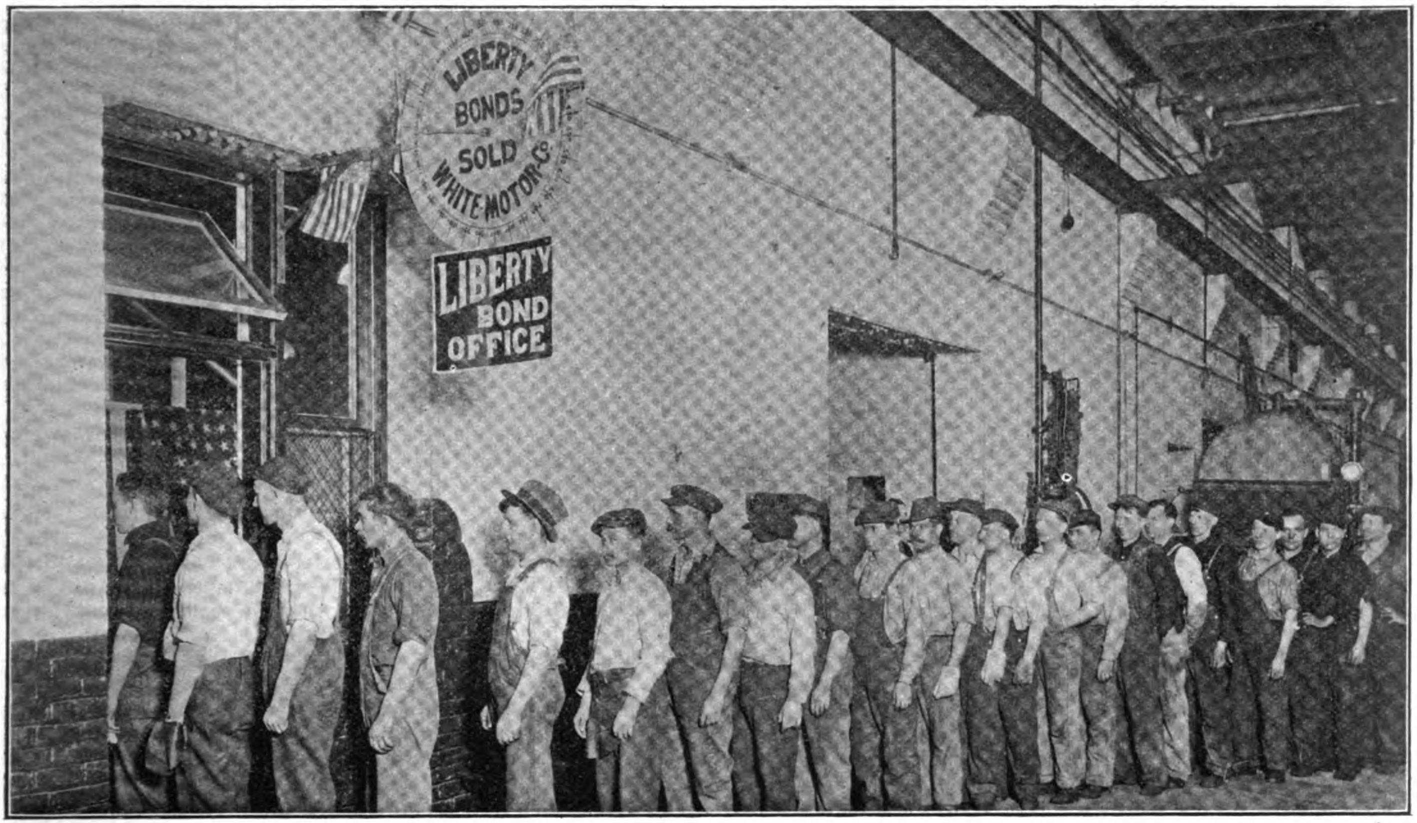
**Frank M. Eldredge**, for the past year director publicity and advertising for the Wallace C. Hood Service Bureau, Detroit, has been elected secretary and treasurer of the bureau and has also become a stockholder and director. Mr. Eldredge, one of the well known advertising men in the automobile industry, was at one time general manager of the Bell Telephone Company of Cleveland.

**W. Donald Clarke**, Detroit, has been appointed general Michigan distributor for the Auto-Spin Flag Company of New York City, and the Detroit Cartridge Lock.

**Jack F. Ryan**, manager of the Danville, Ill., branch of the Gibson Co., Indianapolis, Ind., has entered the officers' reserve corps camp at Fort Benjamin Harrison. Mr. Ryan has been with the Gibson company for the last seven years, a part of the time having been spent in the wholesale department.

**B. W. Collins** has joined the sales organization of the Marshall Castings Co., Marshall, Mich. He was formerly secretary of the Springfield Body Co. and later sales manager of the Parker Rust Proof Co.

**George K. Parsons** of the Brown-Hare-Parsons Company, general distributors for the Disco Self Starter Corporation, has returned from an extensive trip among his dealers in Pennsylvania, Ohio, Illinois and West Virginia. He reports that sales are pouring in very fast.


LIBERTY BONDS SOLD WHITE MOTOR Co.
LIBERTY BOND OFFICE

Under the Liberty Bond Clock at the White Motor Car Company, Cleveland, O., the American Workingman Proves the Spirit That Is in the Automobile Industry When the Country Faces a Crisis.

# HAPPENINGS AMONG THE CAR AND PARTS MAKERS

## What Several of the Leading Manufacturers in the Motor Vehicle Industry and Allied Lines Are Doing or Have Under Consideration

**The White Motor Co.**, Cleveland, O., erected a big Liberty Bond clock in the corridor of the White factory, where the workmen lined up at the lunch hour waiting in line to sign their bond applications. At noon on June 12 the $200,000 mark was passed, when over 4000 bonds had been purchased and the hand on the clock, having completed its third trip around the circle, started on its fourth circuit and was kept moving steadily as applications continued until the expiration of time closed the big loan to the success of which the operatives in this company, in common with their fellow workmen all over the land, so heavily contributed.

**The Reo Motor Car Co.**, Lansing, Mich., has declared the regular quarterly dividend of 2½ per cent. on the common stock, payable July 2 to stockholders of record June 15.

**The Stromberg Carburetor Co. of America, Inc.**, has declared a regular quarterly dividend of 75 cents a share on the company's stock, payable July 2 to stockholders of record June 15.

**The Multi-Battery System**, Chicago, Ill., will place on the market a light electric car, weighing about 1800 pounds, with chain driven rear axles. About 1000 of the machines will be produced.

**The Franklin Automobile Co.**, Syracuse, N. Y., reports unfilled orders on its books amounting to over 225 per cent. more than at the same time last year. Shipments of Franklin cars for the six months ending May 1 show an increase of 143 per cent.

**The Napoleon Motor Co.**, Napoleon, O., will move to Traverse City, Mich., as soon as the necessary arrangements can be made. The company has been organized some time and has signed orders, it is stated, for nearly 5000 pleasure cars and 300 trucks.

**The Ford Motor Co.**, Detroit, Mich., turned out 3496 cars on May 19 and 83,616 during the month of May, as compared with 55,979 cars in May last year. The company is now making a net profit of $21 a car.

**J. M. Hill**, commissioner of motor truck transportation at the Panama Pacific Exposition, has become a member of the executive staff of the Steamotor Truck Co., which was recently formed in Chicago to build trucks incorporating the Doble steam engine as a power plant.

**Max Wollering**, formerly production manager of the Studebaker Corp., with headquarters at Detroit, has succeeded James G. Heaslet as vice president in charge of engineering and production. Mr. Heaslet in tendering his resignation explained that he wished to relieve himself of much of the responsibility that he had been carrying on his shoulders, although he would remain as a member of the board of directors of the corporation.

**The Hewitt Rubber Co.**, Buffalo, N. Y., will enter the tire manufacturing field and plans have been prepared for a plant with a capacity of 5000 tires daily. J. H. Kelly, formerly vice president of the Republic Rubber Co., and F. V. Springer, formerly manager of railroad sales for the Republic Co., have been elected as vice presidents of the Hewitt Co. H. H. Hewitt will continue as president and W. C. Mullett as secretary and treasurer.

**The Hyatt Roller Bearing Co.**, Chicago, Ill., recently conducted a recent sales letter contest in which more than 15,000 salesmen participated under the auspices of the tractor bearings department. Two hundred dollars in prizes were offered. John Ludhagen of Fargo, N. D., was awarded the first honors, $100. J. H. Parvin of Hutchinson, Kan., won $50, the second prize, and H. J. Hazelwood of Des Moines, Ia., took the third prize of $25.

**The Comet Automobile Co.** of Decatur, Ill., has made rapid progress in the production of the Comet car. It is a 50 horsepower, 3⅝ by five-inch motor, with 125-inch wheelbase of latest design and construction, with double cowl body and self-oiling cantilever springs.

**The Packard Motor Car Co.**, Detroit, Mich., has appointed Earle C. Anthony, Inc., the state distributor in California for Packard cars. For the past five years this corporation has represented Packard cars in Southern California, and has now added the central and northern sections to its territory. Among other activities of the Packard interests in California has been the revival of stage coach routes, traversed by Packards, which have been remodeled by the Los Angeles Packard shops, with uniformed drivers and with a service maintained as a thorough overland transportation system.

**The Pennsylvania Rubber Co.**, Jeannette, Penn, this year will not give the usual picinc and outing to its employees. Instead, a check for $1200, the fund necessary to defray the expenses of the outing, assented to by an overwhelming vote of the employees, has been turned over to the Jeannette, Penn., unit of the American Red Cross.

**The Dowse Rubber Co.**, Chicago, Ill., is capitalized for $2,500,000, of which $1,000,000 is 7% cumulative preferred and $1,500,000 is common stock. B. C. Dowse is president of the company. "Dowse-Durability" is the trademark and will appear on the products of the company.

**The Moon Motor Car Co.**, St. Louis, Mo., has now connections for the sale of Moon cars throughout the open countries of Europe and in Asia and North Africa. By a contract just closed with the Anglo-American Export Agency 500 cars are to be exported to those fields during the next 12 months, with an increase provided for in following years.

**The Universal Valveless Four-Cycle Motor Co.**, Muskegon, Mich., has changed its name to the Muskegon Engine Co. and has purchased a 40-acre tract of land at Muskegon, on which it will erect a large factory. The general offices, formerly at Grand Rapids, and the engineering department at Toledo, O., have been moved to Muskegon.

**The Advance Rumley Co.**, Battle Creek, Mich., is arranging to manufacture $2,000,000 worth of oil pull tractors this year. The force of 400 men now employed will be doubled.

**The Republic Motor Truck Co.**, Alma, Mich., will shortly erect an assembly plant at a cost of $175,000 in some large centre in California. The plant will give employment to 300 men. The company is now turning out 100 trucks per day and is planning to double its capacity within the next few months and to manufacture about 50,000 trucks of two models, one similar to the present Dispatch and the other with a ¾-ton capacity in 1918.

**The Perfection Tire and Rubber Co.**, Chicago, is starting a branch plant for the manufacture of tire and asbestos cloth. It will be an eight-set plant, to employ between 400 and 500 operators.

**The Hurlburt Motor Truck Co.**, New York, N. Y., located at Third avenue and Harlem river, has increased its equipment and manufactures 1200 trucks a year.

**The Bear Mfg. Co.**, maker of motor car starters, has been incorporated with a $200,000 capital to do business in Illinois. It has taken over the Sandbo Starter Co., Rock Island, Ill., and will locate its plant in that city.

**The Prest-O-Lite Co.**, Indianapolis, Ind., has turned over 17 acres of ground near its plant to workmen, who are planting the ground into small garden tracts. F. D. Ensminger, director of safety and social welfare of the company, has supervision over the work.

**The Menominee Motor Truck Co.**, Menominee, Mich., has closed a contract with the Claude M. Nankivel Co., New York, a large exporting concern, for approximately $2,000,000 worth of Menominee trucks for shipment to foreign shores. It is said that most of the trucks will go to Russia, where C. M. Nankivel, president of the New York company, is now engaged in the establishment of headquarters.

**The Firestone Tire and Rubber Co.** is erecting an addition to its plant at a cost of $1,000,000 and will increase the production from 20,000 tires to 30,000 tires a day, as soon as this addition is finished.

**The Hyatt Roller Bearing Co**, Detroit, Mich., started the "Hyatt Roller" from Detroit, June 4, on a tour of the United States. This car is a Buick, which has a verified record of 261,800 miles of travel and which still contains the original set of Hyatt bearings with which it was equipped. The car was constructed in 1909. The car will first visit the New England states, thence go through New York City, Washington, St. Louis, Denver and Los Angeles, up the coast to Seattle and back to Detroit.

**The LeRoi Co.**, Milwaukee, Wis., manufacturer of four and six-cylinder engines for passenger and commercial cars and tractors, has broken ground for a one-story machine shop addition to its plant. Several months ago the company took over the Milwaukee Machine Tool Co. and the company is capitalized at $350,000.

**The Bimel Spoke and Auto Wheel Co.**, Portland, Ind, is completing additions costing $60,000. These consist of six new dry kilns and is considered the largest compartment in use in any wheel plant so far. The kilns permit of drying spokes and felloes for small truck wheels at the rate of 400 sets a day. The capacity in the truck wheel department is now 175 to 200 sets a day.

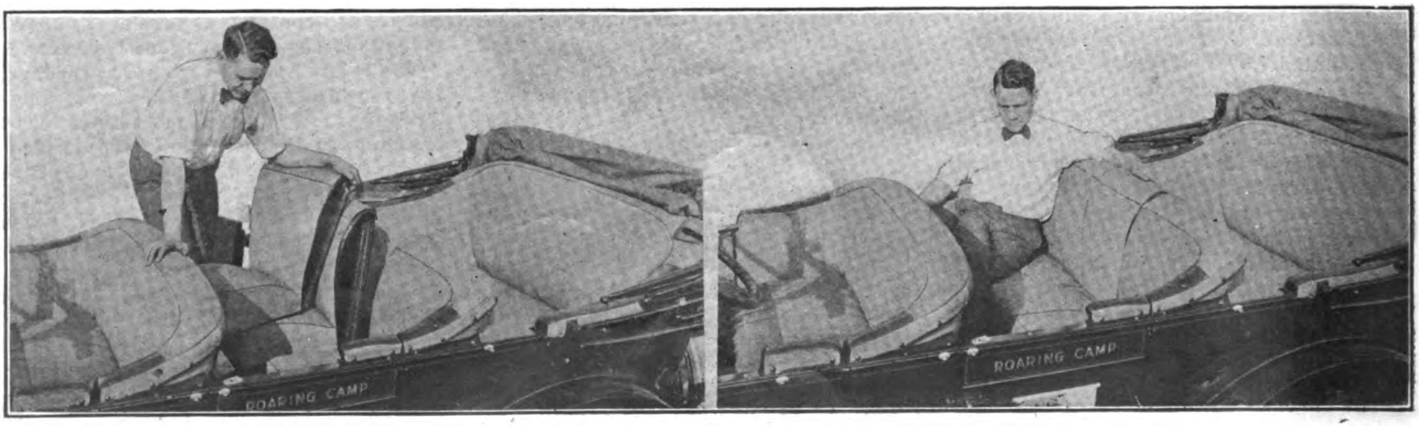
**The Kissel Motor Car Co.**, Hartford, Wis., is working on an order for 43 Kissel trucks in one, two and four-ton sizes for its representatives in the Dutch East Indies. Delivery also is being made of a consignment of 300 Kissel Hundred-Point Sixes destined for Madrid, Spain.

**The Day-Hamlin Mfg. Co.** has been formed at Jackson, Mich., with a capital of $50,000 and will manufacture tractors and tractor parts,

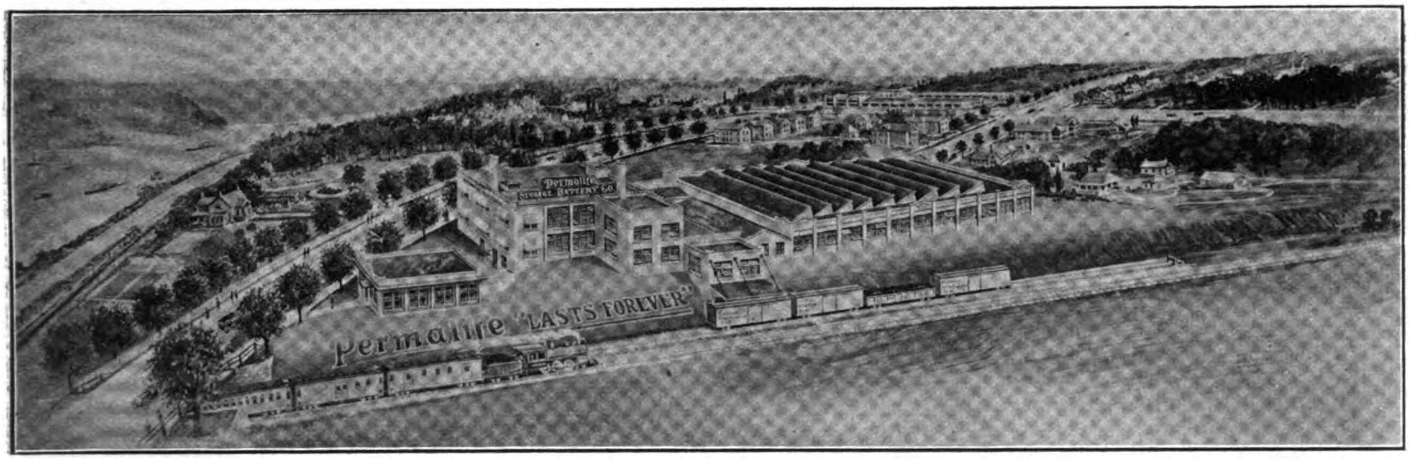
**The Spring City Foundry Co.**, Waukesha, Wis., will build a one-story addition, 80 by 140 feet. The new building will be of structural steel and brick, on concrete foundations, with a large area of glass walls and roof. The company specializes in motor castings and parts.

**The Morgan Potter Mfg. Co.**, Beacon, N. Y., for more than 30 years engaged in manufacturing an accessory to the carriage trade, has decided to devote its efforts to the motor industry. The company has changed its name to Morgan Potter Co. The company will not only make trucks and truck attachments for converting cars into trucks, but will make a medium priced four-cylinder, five-passenger touring car.

**The Crow-Elkhart Motor Co.**, Elkhart, Ind., has purchased a factory site of 26 acres adjoining the present plant. The



Packard Autocar of Modern California Stage Line, Showing Removable Seat Arrangement—They Operate in Interurban Service on a Fixed Schedule and the Operators Are All Uniformed.



**Birdseye View of Large, Modern Plant of the Permalife Storage Battery Co., Poughkeepsie, N. Y., Recently Consolidating the Permalite Corporation of Indianapolis and the W. L. Battery Co. of Poughkeepsie, N. Y.**

company recently completed a new administration building and a wood working plant, which cost $20,000. Two additional structures are to be erected, which will be used for the manufacture of a new line of convertible five-passenger cars which the company expects to place on the market.

**The Michigan Screw Co.**, Detroit, is now equipped to handle its business with greater ease than a year ago on account of the additional buildings, which added 35,000 square feet to its production department. The company, which is now employing more than 300 men, has had to resort to considerable night work during the last 12 months.

**The Titan Motors Co.** has taken over the plant of the Bour Davis Motor Car Co. for the manufacture of engines for army trucks. The plant has a floor space of 56,000 square feet.

**The Budd Wheel Corp.**, Philadelphia, Penn., has leased the ground floor of the Quaker lace mill at 22nd street and Lehigh avenue for office and manufacturing purposes. The company is subsidiary to the Budd Mfg. Co., maker of all-steel automobile bodies.

**The Thermoid Rubber Co.**, Trenton, N. J., has increased its yearly output of Thermoid brake lining by 30 per cent. through the addition of new hydraulic press equipment. The output for 1916 totaled over 9,000,000 feet.

**The Ecorse Foundry and Machine Co.**, Ecorse, Mich., will start the manufacture of gray iron castings at a capacity of 100 tons per day. The large plant is now completed. Officers of the company are: B. F. Everitt, president; W. A. C. Miller, vice president, and A. J. Kinnucan, treasurer and general manager.

**The Challoner Co.**, Oshkosh, Wis., has taken a contract to manufacture the Giant grip anti-skid device for commercial cars, designed by William H. Krug, a member of the Challoner staff and its subsidiary, the Giant Grip Co., organized to manufacture the new grip, which consists of sets of clamps fastened permanently to the spokes of wheels equipped with solid tires. The clamps support chains going around the tire. The chains are removable and any number may be used.

**The Grant Motor Corp.**, Cleveland, O., has purchased additional land adjoining its present new plant and will build several buildings at a cost of $500,000. One building will be 647 by 160 feet and another 400 by 160 feet. In addition, there will be a new office building 40 by 160 feet.

**The Tillotson Carburetor Co.**, Toledo, O.. has moved into new quarters. It will employ 500 men and will turn out 2000 carburetors daily, Willys-Overland taking the major part.

**The Du Pont de Nemours Co.**, Claymont, Del., is erecting a large aviation school. Two hangars have been completed and three more are under construction. Curtiss and Thomas tractor type airplanes and Thomas flying boats are used.

**The United States Tire and Rubber Co.**, New York, N. Y., is making demountable type tires such as are called for in the government specifications for army use, and can make immediate deliveries. The Kelly-Springfield, Firestone and Goodyear companies are also preparing to make this type in commercial quantities.

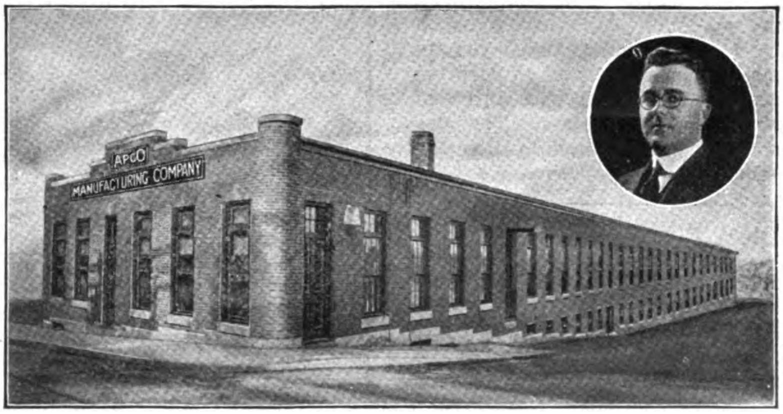
**The Motors Metal Mfg. Co.**, Detroit, Mich., has increased its capital stock from $100,000 to $200,000.

**The Moore Motor Vehicle Co.**, Minneapolis, Minn., has concluded a deal for the purchase of the abandoned car shops at Danville, Ill. The company will employ 400 men before the close of next year.

**The Permalife Storage Battery Co., Inc.**, with factory and general office at Poughkeepsie, N. Y., and general western office at Indianapolis, Ind., is the result of the consolidation, just completed, of the Permalite Corporation of Indianapolis, and the W. L. Battery Co. of Poughkeepsie, N. Y. The company is establishing depots in all parts of the country for the exchange of their batteries. It announces the rather unique distribution plan which permits a Permalife user to exchange his battery as often as necessary, for life, for a perfect, fully charged one, at a standardized fee, which amounts to about the same as a charge. The company also announces the engagement of Frederick Wright, formerly with the W. L. Battery Co., and a pioneer in the battery manufacturing business, who will have supervision of the large, modern plant and the manufacture of storage batteries.

**The Auto Parts Co.**, Providence, R. I., was reorganized June 1 as the Apco Manufacturing Co., with $200,000 capital, an increase of $170,000. Greatly enlarged facilities will be provided for doubling production and the large line of Apco specialties for Ford cars will be continued. Thomas F. Wilson, the president and treasurer of the company, started the business in a modest way eight years ago.

**The Globe Tire Co.**, Laporte, Ind., will have its plant in operation in 90 days. The new company has bought a large factory building and is converting it into a tire manufacturing plant. The workmen are remodeling the plant.



**Home of Apco Products, Thomas F. Wilson, President and Treasurer. Providence, R. I.**

# *Labor and Money Saving Suggestions for the Motor Car Repairman*

### GASOLINE STRAINER.

(Figure 19.)

Dirt, sand or water are not uncommon things to find in gasoline, yet it is aggravating to find the presence of such impurities by the carburetor method. If it is possible to remove them before they reach the carburetor then much time and patience may be saved. A cheap, but serviceable filter is shown herewith. It is made of pipe fittings and a small piece of copper gauze and assembled as follows: Cut a 4¼ inch circular piece of copper gauze into halves, and, after bringing the sides together, solder them so as to form a cone, as shown in the illustration. This cone is next soldered to a copper wire ring the same size in diameter as the pipe nipple D. The pipe nipple should be made of 1⅛ inch brass pipe about three or four inches long. Screw the pipe nipple into the cap F, with the copper gauze ring between, being careful to make up the joint tightly by using soap or shellac. After this is done bore and tap the hole for the pipe, A (⅛ inch pipe), also the hole for the drain cock. Fill with gasoline so as to be sure that the joints are tight. If it is found that they are, put on the cap, E, which has been tapped for the pipe assembly, B. Connect A with the gasoline tank, B, with the carburetor. Note that the pipe, A, extends into the gauze funnel. This apparatus effectually separates water or dirt from the gasoline.

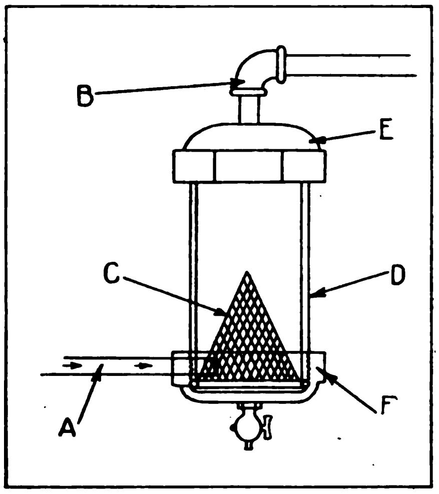


Fig. 19—Gasoline Strainer.

### ENLARGING A CHUCK.

(Figure 20.)

The repair man frequently finds that his lathe chuck is not large enough to allow a piece of work to be inserted between the jaws. Bend a strip of strap iron in the form shown at A in our illustration. A square hole is pierced through it and one of the elbows is provided with a set screw for fastening the device to the chuck jaw. Our second illustration shows a three-jaw chuck with three of these auxiliary jaws in place. The size of the work is only limited by the size of the lathe.

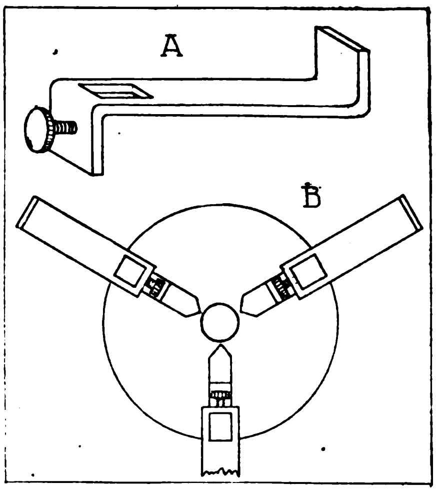


Fig. 20—Enlarging a Chuck.

### REPAIRING PINHOLE PUNCTURES.

One of the causes for tire failure can be traced to tread separation from fabric due to water seepage between the layers through small cuts or punctures. Tires should be examined frequently for such small holes and when found breaks should be immediately repaired. If the break is small, clean it thoroughly with gasoline, cutting away ragged edges. The hole should then be filled with cement and allowed to dry. More cement should then be applied and a piece of soft rubber forced into the hole and clamped into place. After it has dried, smooth off, after which the heat of frictional contact with the road will complete the job.

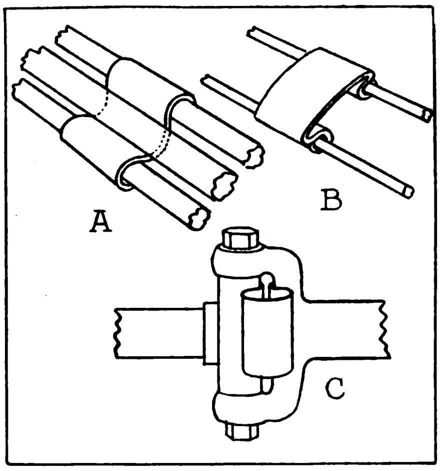


Fig. 21—Suggestion for Making Rattle Silencers.

### RATTLE SILENCERS.

(Figure 21.)

Many of the squeaks and rattles about an automobile are caused by loose rods, frequently in the steering system. There is illustrated herewith a device for overcoming such rattles where two or three such rods are near together. The method shown at A is adaptable where three rods are parallel. At B is shown an arrangement for silencing a two-rod combination. At C is shown a similar device as applied to a yoke. In each case the silencer consists of a strip of spring brass or steel bent into the shape as shown in the cut.

### SPRING WINDER.

(Figure 22.)

While a lathe is perhaps the most efficient spring winder, it has its disadvantages. An end is very apt to work free, whip around the arbor and inflict a very severe cut in the hand of the operator. Such an accident cannot happen with the device illustrated in the cut.

A strip of wood, "E," has a handle at one end, "A," a hole at the other end large enough to fit over the largest size arbor and two wire guiders, C and B.

The arbor is put into the vise and one end of the spring wire fastened. As the handle "A" is swung around the spring begins to form on the arbor, the growing coils of the spring pressing against F keeping the spring closely coiled. The supply of wire passes through B and C, and should it break off the broad arm E prevents the loose end from cutting the operator.

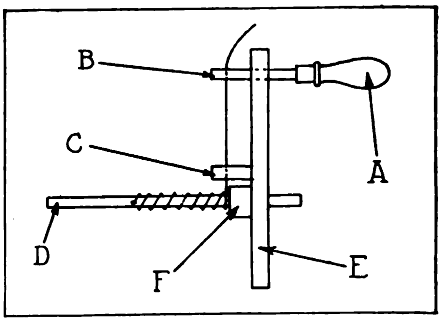


Fig. 22—Spring Winder.

### MEASURING WITH CALIPERS.

(Figure 23.)

Accurate measuring of odd shaped pieces of iron, cylinder walls, flywheels, etc., frequently present difficult problems to the automobilist. With an ordinary pair of calipers the measurement may not be taken because after it has been found the calipers cannot be removed on account of projections in the casting without changing the measurement. The illustration shows calipers in two positions, the first as set to take outside dimensions, the second as set to take inside measurement. It will be noted that upon the sides of the calipers are punched at A and B two dots. After the calipers have been put into position the distance between A and B is accurately measured, the calipers removed, then set back so that the distance between A and B is the same as it was when on the piece. The distance between the ends may then be measured.

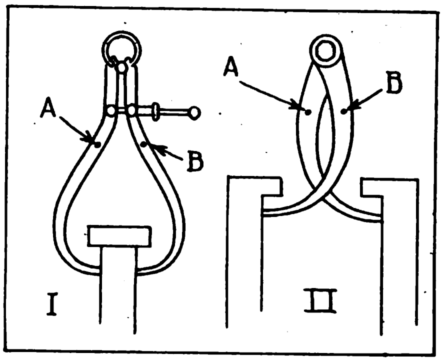


Fig. 23—Calipering Castings.

### MUDGUARD DENTS.

(Figure 24.)

Unsightly dents in mudguards detract from the beauty of the car as well as the enjoyment of riding. If one has ever tried to hammer out the dents or bends with an iron hammer against a piece of wood, one will appreciate the fact that such a procedure is not practical, as not only the surface finish is removed, but also a certain stretch of the metal, buckling or warping ensue. Two methods are illustrated, either of which has proven effectual. The first shown at A is the mallet sand bag method. The advantage that this method has over the hammer board method is that the mudguard finish is not removed from the soft contact with the sand bag, and the dent may be easily pounded out, without stretching the metal. The method shown at B is very effectual for large bends or dents. By this method the bend is removed by the pressure of the tire and wheel supporting the car, as there is no hammering effect, the metal is not warped or distorted in the least. Badly dented mudguards are often straightened by either of these methods and made as good as new.

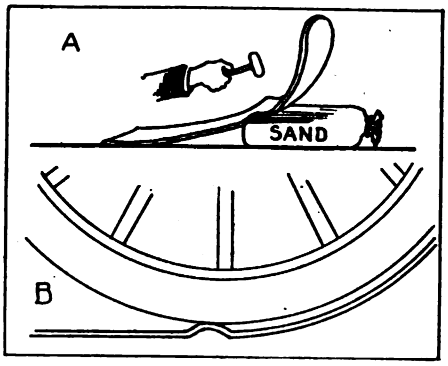


Fig. 24—Removing Dents from Mudguards.

### VALVE REPAIR.

(Figure 26.)

Though a broken valve should be replaced at the earliest opportunity, it frequently happens that such replacement is not convenient and, therefore, it is necessary to make a temporary repair. A method by which two things are accomplished and is often used is illustrated herewith. Square off the broken ends of the valve with a grinding wheel, or file, and tap into each for a depth of about ⅝ of an inch, as shown at A and C. Insert the threaded piece, D, which may be made by cutting off the head of a machine screw. Now fit a small washer over the screw, as shown at B, to compensate for the filed or ground off portion, and screw on the end C. Not only is this a repair job, but valve stem adjustment is made possible. By varying the thickness of the washer B the length of the valve stem may be either increased or diminished and proper adjustment maintained.

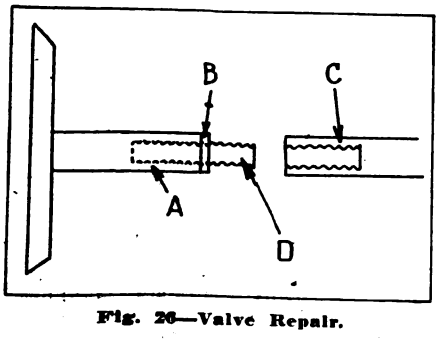


Fig. 26—Valve Repair.

### REMOVING CYLINDER HEADS.

(Figure 25 A.)

Cylinder heads frequently become firmly fastened to the engine block so that it is not an easy matter to take them from the engine without damaging the gaskets, even after all of the retaining bolts have been removed. To remove such cylinder tops, take out all of the spark plugs, turn the crank until the two end pistons are at the bottom of their stroke and into each insert a block of wood about three-eighths of an inch in diameter, around which has been cut a shoulder two inches from the end, as shown in the illustration. When the crank is turned and the pistons rise the shoulder presses upon the inside of the head and it is an easy matter to force it from the block.

### TEMPORARY BUSHINGS.

(Figure 25 C.)

It is sometimes desirable to replace a badly worn bushing, but lack of time prevents. Then, too, such a replacement may not be entirely necessary and may be left until the car is overhauled. The illustration shows such a replacement, which is rather crude, but practical. It is applied by winding a piece of thin brass around the journal until the outside diameter is equal to the internal diameter of the bearing. It is then slipped along the journal and forced into the bearing, being held in place by a small set screw if necessary.

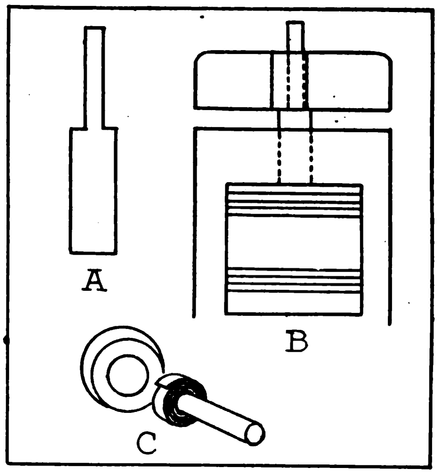


Fig. 25—A, Block for Removing Cylinder Head; B, Same in Use; C, Temporary Bushing.

### UTILITY MIRROR.

(Figure 27.)

In one side of a piece of oak board, four inches long, 2½ wide and ½ inch thick, gauge out a square recess 3½ by two inches, as shown at A. Into the centre of the back screw a binding post, as shown at B. A plain mirror, such as is found in a vanity case, is next fitted into the recess and held by means of four short strips of brass across the corners, as shown at C. A length of wire is bent into a Z shape and one end inserted in the binding post on the back of the mirror frame. We suggest a few of the uses of this little mirror: It may be used in the crank case for examining the wrist pins, in back of the radiator for examining fan and timer connections, in the transmission for inspecting the backs of gears, etc. It may be fastened to the windshield by a binding post soldered to a piece of hard brass, as shown at D.

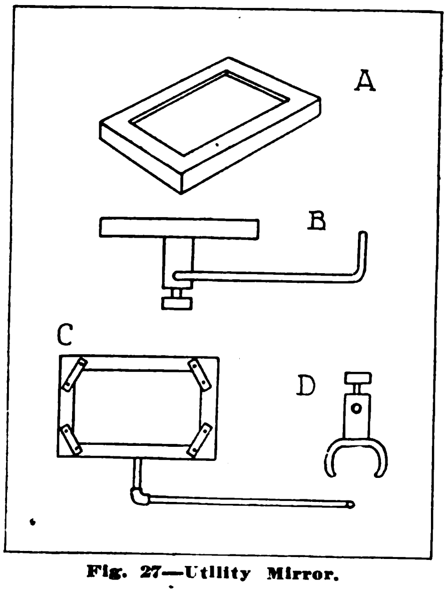


Fig. 27—Utility Mirror.

# SECURITIES AND GENERAL MATERIALS MARKET

## Condition of Automobile Stocks and the Markets for General Material As Reported at Middle of Last Month and Corresponding Day This Month

**The tabulations following show the advance or decrease in the quoted stock exchange prices of the several active motor vehicle and kindred securities, and of the change in prices of the general material market, as it relates to the motor car industry.**

## *Automobile Securities Quotations*

| | May 10 | | June 14 | |
|---|---|---|---|---|
| | Bid | Asked | Bid | Asked |
| Ajax Rubber Co | 68 | 70 | 68½ | 71¾ |
| J. I. Case T. M. Co., pfd | 84 | 88 | .. | 85 |
| Chalmers Motor Co., com | 20 | 28 | 10 | 15 |
| Chalmers Motor Co., pfd | .. | .. | .. | .. |
| Chandler Motor Co | 94 | 100 | 89 | 90 |
| Chevrolet Motor Co | 103 | 104½ | 98 | 100 |
| Fisher Body Corp., com | 32 | 38 | 35 | 35½ |
| Fisher Body Corp., pfd | 94 | 96 | 87½ | 88½ |
| Fisk Rubber Co., com | 70 | 75 | 78 | 80 |
| Fisk Rubber Co., 1st pfd | 103 | 106 | 103 | 106 |
| Fisk Rubber Co., 2nd pfd | 92 | 95 | 92 | 95 |
| Firestone Tire and Rubber Co | 128 | 131 | 125 | 127 |
| Firestone Tire and Rubber Co., pfd | 101 | 108 | 106 | 108 |
| General Motors Co., com | 106½ | 107½ | 108½ | 109 |
| General Motors Co., pfd | 89 | 90¾ | 88 | 89 |
| B. F. Goodrich Co., com | 48½ | 50 | 52⅜ | 52¾ |
| B. F. Goodrich Co., pfd | 106 | 109 | 107½ | 108⅛ |
| Goodyear Tire and Rubber Co., com. | 195 | 200 | 193 | 197 |
| Goodyear Tire and Rubber Co., pfd. | 106½ | 108¼ | 106 | 108 |
| Grant Motor Car Corp | 5 | 8 | 3 | 5 |
| Hupp Motor Car Corp., com | 3 | 4 | 3 | 4 |
| Hupp Motor Car Corp., pfd | 74 | 80 | 72 | 80 |
| International Motor Co., com | .. | 16 | 5 | 10 |
| International Motor Co., 1st pfd | .. | 70 | 30 | 50 |
| International Motor Co., 2nd pfd | .. | 30 | 10 | 20 |
| Lee Rubber and Tire Corp | 18 | 18¼ | 18 | 19 |
| Maxwell Motor Co., Inc., com | 51 | 52 | 48¼ | 49 |
| Maxwell Motor Co., Inc., 1st pfd | 66 | 67 | 65 | 65¾ |
| Maxwell Motor Co., Inc., 2nd pfd | 30½ | 32 | 31 | 32 |
| Miller Rubber Co., com | 195 | 204 | 190 | 198 |
| Miller Rubber Co., pfd | 104 | 106 | 102 | 105 |
| Packard Motor Car Co., com | .. | 152 | .. | 151 |
| Packard Motor Car Co., pfd | .. | 101½ | 95 | 98 |
| Paige-Detroit Motor Car Co | 32 | 33½ | 29 | 31 |
| Peerless Truck and Motor Co | 11 | 11¼ | 15 | 18 |
| Portage Rubber Co., com | 145 | 150 | 152 | 158 |
| Portage Rubber Co., pfd | .. | .. | .. | .. |
| Regal Motor Car Co., pfd | .. | 24 | .. | 22 |
| Reo Motor Car Co | 28¾ | 29⅛ | 28 | 30 |
| Saxon Motor Car Corp | 46½ | 47½ | 41½ | 43 |
| Springfield Body Corp., com | 52 | 62 | 52 | 57 |
| Springfield Body Corp., pfd | 100 | 110 | 110 | 117 |
| Standard Motor Construction Co | 11½ | 12½ | 12 | 13 |
| Stewart-Warner Speed. Corp | 74¼ | 75¼ | 74 | 76 |
| Studebaker Corp., com | 89 | 89½ | 81¾ | 82 |
| Studebaker Corp., pfd | 101 | 107 | 101 | 105 |
| Swinehart Tire and Rubber Co | 68 | 72 | 65 | 70 |
| United Motors Corp | 30⅛ | 30⅜ | 27½ | 27¾ |
| U. S. Rubber Co., com | 55½ | 56 | 61¼ | 62¾ |
| U. S. Rubber Co., pfd | 106½ | 107 | 106 | 108 |
| White Motor Co | 44¼ | 45 | 46¼ | 47¼ |
| Willys-Overland Co., com | 30 | 30½ | 28¾ | 29 |
| Willys-Overland Co., pfd | 95 | 97 | 92½ | 95 |

## *General Market Prices*

| | May 15 | June 18 |
|---|---|---|
| Antimony | 25.00 | 20.00 |
| Iron, foundry, S., ton | 38.00 | 40.00 |
| Iron, foundry, N. ton | 42.00 | 42.90 |
| Iron, Bessemer, ton | 42.00 | 47.95 |
| Steel, Bessemer, ton | 80.00 | 100.00 |
| Copper, elec., 100 lbs | 32 | 33 |
| Copper, lake, 100 lbs | 32 | 31 |
| Lead, 100 lbs | 9.50 | 11.75 |
| Tin, 100 lbs | 54.50 | 58.50 |
| Petroleum, Kan., cr., bbl | 1.70 | 1.70 |
| Petroleum, Penn., cr., bbl | 3.10 | 3.10 |
| Linseed oil, raw | 1.27 | 1.24 |
| Lard oil, prime | 1.85 | 1.90 |
| Fish oil, Menhaden, br | 80 | 92 |
| Sulphuric acid, 60 | 1.50 | 1.50 |
| Cottonseed oil, bbl | 16.40 | 16.35 |
| Silk, raw, Italy | 7.45 | 7.50 |
| Silk, raw, Japan | 5.97½ | 6.40 |
| Rubber, fine, up-river, Para | 76 | 72 |
| Tire, scrap | 6½ | 7¼ |
| Steel, open hearth, ton | 80.00 | 100.00 |

### DOMESTIC CRUDE OIL PRICES.

The prices of crude petroleum at the wells during the middle of the month of May were:

| | | | |
|---|---|---|---|
| Pennsylvania dark | $3.10 | Corsicana light | $1.70 |
| Mercer black | 2.18 | Corsicana heavy | .85 |
| Cabell | 2.37 | Electra | 1.70 |
| New Castle | 2.10 | Henrietta | 1.70 |
| Corning | 2.60 | Caddo, La., 38° | 1.90 |
| Wooster | 2.18 | Caddo, La., heavy | 1.00 |
| North Lima | 1.88 | Healdton | .90 |
| South Lima | 1.88 | Moran | 1.70 |
| Indiana | 1.78 | Strawn | 1.70 |
| Princeton | 192 | Thrall | 1.70 |
| Somerset 32° | 2.20 | De Soto | 1 [illegible] |
| Ragland | 1.00 | Crichton | 1.40 |
| Illinois above 30° | 1.92 | Canada | 2.28 |
| Kan. & Okla | 1.70 | Humble | 1.00 |
| Plymouth | 1.88 | | |

**Naphtha.**

| | 10-gal. drums | |
|---|---|---|
| | Under 100 cases | 100 cases and over |
| Benzine, 59-60° | 35¼ | 34¾ |
| Stove | 35½ | 35 |
| Auto, 68-72° | 41 | 40⅛ |
| Naphtha, 73-76° | 45 | 44½ |

| | In cans and cases | | |
|---|---|---|---|
| | Under 100 | 100-199 | 200-299 |
| Benzine, 59-72° | 30½ | 30¼ | 30 |
| 75 a 76° | 40¼ | 40 | 39¾ |
| Stove | 30¾ | 30½ | 30¼ |
| Auto, 68-72° | 36¼ | 36 | 35¾ |

### NEW YORK CITY PRICES.

New York City prices for petroleum and its products were:

**Petroleum.**

| | | | |
|---|---|---|---|
| Crude, barrels, a gallon | 15a18 | Fuel, 31° | 10½ |
| Refined, barrels | 12 | Fuel, 34° | 11 |
| Tank wagons delivery | 9 | | |

**Naphtha.**

| | | | |
|---|---|---|---|
| Garages | 24 | V. M. & P. deod., in steel | 23 |
| Consumers | 26 | V. M. & P. deod., in wood | 26 |

**Gasoline.**

| | | | |
|---|---|---|---|
| Gas machine, steel | 41 | 68-72° steel | 28 |
| 72-76° | 38 | 68-70° wood | 32 |
| 72-76° wood | 38 | | |

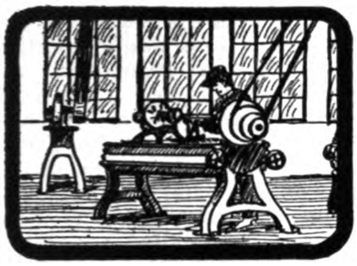
## *Foreign Trade Opportunities*

(Address Bureau of Foreign and Domestic Commerce, Washington, D. C., Giving Number, Which Will Forward Correspondence, Unless Otherwise Stated.)

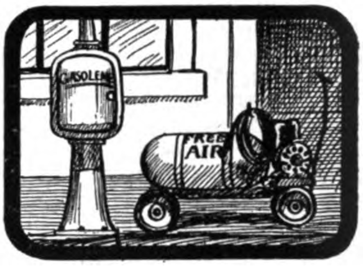
24,502—The chancellor to a foreign consulate in the United States who expects to leave for the West Indies and South America the latter part of July, desires to represent American manufacturers and exporters, on an agency basis, for the sale of machinery for agriculture, roads, mines, industries, hardware, tools, plates and pipes; silk, woolen, cotton and linen goods; drugs, chemicals, perfumes; paper of all kinds; jewelry; automobiles, carriages and wagons; leather goods; electrical supplies; rugs and carpets; novelties; hosiery and underwear and metal works. References.

24,569—Catalogues are desired by a firm in France from American manufacturers and exporters of automobile traction apparatus, motorculture, etc.

24,699—A firm in the United States with extensive connections throughout Latin America desires to be placed in communication with American manufacturers and exporters of automobiles, fountain sirups and supplies, bottlers' supplies, sugar mill specialties, oil well machinery, drills, etc., paints, varnishes, steel lockers and gasoline. References.



# GARAGE EQUIPMENT



### AIR PRESSURE CONTROLLER.

The new model M automatic air pressure controller, which has just been put on the market, is designed to automatically start and stop the motor operating an air compressor, thereby relieving the garageman of the trouble of watching the air gauge and starting and stopping the motor by hand. This controller will operate successfully on alternating current motors up to and including five horsepower and on direct current motors up to and including one-half horsepower. It is intended for use in connection with the No. 42 motor driven air compressor, a cut of which is shown herewith, and as this air compressor is driven by a one-half horsepower direct or alternating current motor, it will work successfully with the model M automatic controller.

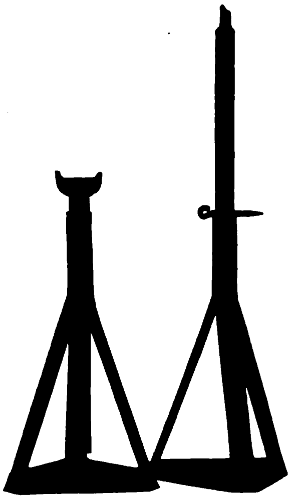
It is not a very hard matter to figure out how one of these automatic controllers will more than pay for itself in a very short while, as the only attention necessary is an occasional oiling of the motor, and the controller will insure a constant air supply at the right pressure without any attention whatever when once properly installed.

**Manufactured by the Brunner Mfg. Co., Utica, N. Y. Write for catalogue and prices.**

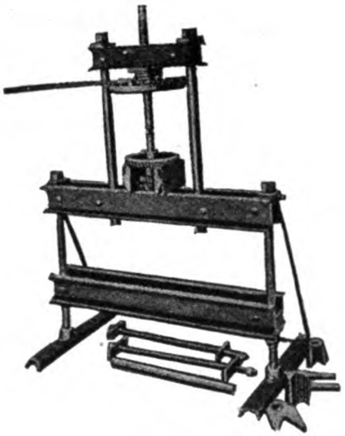
### WELDED STEEL BLOCKING.

Proper repair work is entirely dependent upon the mechanic's comfort and the accessibility of the part upon which the job is being done. No mechanic can be expected to do good work if he is forced to lie on his back beneath a machine that is supported by bulky and cumbersome planks, boxes, etc. The illustration shows the Dyer welded steel blocking, which is designed for supporting machines while work is being done on them. Being light and open in construction they take but a minimum amount of floor space, yet offer sufficient base support. They are designed for strength and soon pay for themselves by the time saved in placing them, as against that taken in placing heavy blocks and wood planks. Being adjustable to height, the work can be placed and raised to the most convenient position.

**Manufactured by the G. H. Dyer Co., Cambridge, Mass. Prices upon application.**

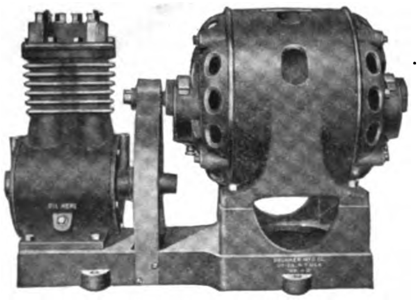


Welded Steel Blocking.



Universal Auto Press.

Brunner Air Pressure Controller.



Brunner Air Compressor No. 42.

### HB CHARGING SET.

The new model of the HB Charging Set, which is now being put on the market, is rated at ½ k. w., an efficiency greatly in excess of the previous capacity of the machine. This increase in efficiency has come from improved design and an increase in the capacity of the operating motor. The new model will charge from one to seven storage batteries at one run. An automatic voltage control within the set itself makes it possible to charge, at the same time, batteries of different voltage. It is stated that with this model the current cost per battery runs between 12 and 15 cents, making possible liberal profits for the garage owner. The equipment is both simple to operate and compactly designed, all the apparatus, consisting of motor, generator and switchboard, with controlling switch and measuring apparatus, being mounted on the same base.

**Manufactured by Hobart Bros. Co., Troy, O. Write for prices.**

### UNIVERSAL AUTO PRESS.

A powerful press is now recognized as a necessity in every garage and repair shop, large or small. The larger the scope of work possible the greater its usefulness. Illustrated herewith is the Universal Auto Press, which with the fittings, may be used for work up to 42 inches in diameter by 24 inches between the upper and lower tables. Two leverages are obtainable, a high speed of 1000 to one for ordinary work and 2200 to one for special pressures. The press is made of heavy channel iron and in two parts, an upper portion for small, short work, and a lower section for large diameter work. The screw is two inches in diameter, four pitch square cut thread with a 12-inch travel. The capacity is 22 tons.

**Manufactured by the United Engine and Manufacturing Co., Hanover, Penn. Price complete with fittings, $55.**

### ROTHWEILER PUMP.

A saving of oil and greater efficiency in handling are two features claimed for the Rothweiler pump. This device consists of a pump which delivers a full quart of oil at each stroke, equipped with a type of spout designed to eliminate dripping, mounted on a long tube which will reach to the bottom of an ordinary oil barrel standing on end. The tube is so arranged as to be telescopic and with this feature can be used in the barrel either from the end or side.

**Manufactured by Rothweiler & Co., Broadway, Seattle, Wis. Price upon request.**

## CINCINNATI LATHE.

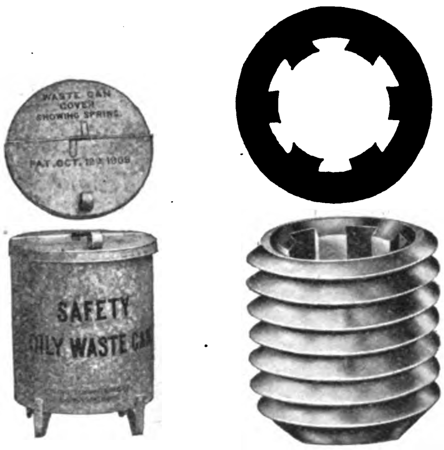
One of the most important garage tools is, perhaps, the lathe. Upon it depends the quality of the work and consequently the satisfaction of the customer. The time required to do work on a broken down or worn out lathe is often greater than that required on one in good order, to say nothing of the product, which is seldom good. The workmanship and materials entering into the Cincinnati lathes are said to be the best obtainable. All parts are machined in jigs, sliding surfaces scraped to surface plates and cylindrical parts fitted by grinding or lapping. The castings are made of close grained iron, the beds of semi-steel and feed gears, pinions and gears subjected to the severest strains are made of steel. The illustration shows a severe duty quick change gear engine lathe with three-step cone double back gears, oil pan and pump complete. Each lathe is regularly furnished with double wall apron, chasing dial, automatic stop, cabinet leg, plain or compound rest, centre rest, follow rest, large and small face plates, wrenches, self oiling friction countershaft, etc., complete and ready for use. The quick change screw cutting box gives an unlimited range for cutting standard or metric threads by simply shifting the lever.

**Manufactured by the Cincinnati Lathe and Tool Co. Oakley, Cincinnati, O. Write for description and prices of all styles.**

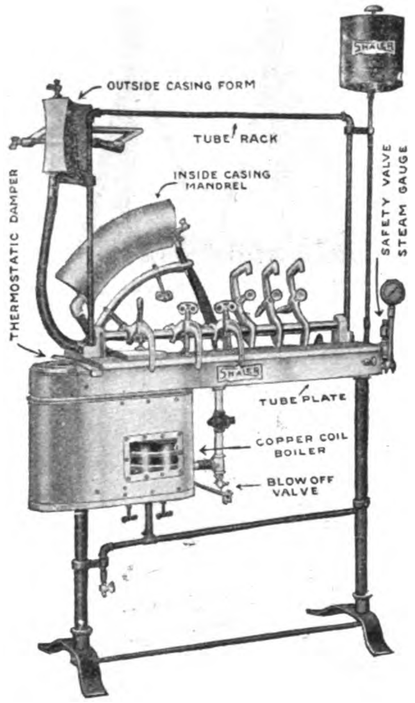
## SAFETY WASTE CAN.

The question of fire hazard in a garage is an important one, and it is the owner's duty to reduce it to a minimum by doing all in his power to prevent careless disposal of oily waste. The illustration shows the Dover safety oily waste can. These cans are made of heavy galvanized iron and by a special process of construction there are no soldered joints. The cover is held closed by a patent self-closing spring which, it is said, is not susceptible to wear. This can may be obtained in either a round shape or half round.

**Manufactured by Dover Stamping and Manufacturing Co., Cambridge, Mass. Prices range from $2 to $13.12, according to size.**



At Left, Dover Safety Waste Can. At Right, a Bristo Safety Set Screw.



Shaler Vulcanizer, Type NPR. No. 41.

## SHALER VULCANIZER.

Our illustration shows a new model, type NPR, No. 41, Shaler Vulcanizer, which has just been put on the market. This model shows several improvements over the 1916 model, especially in increased water capacity and a new and convenient device for clamping tubes to the vulcanizer. Another change of considerable importance is in the heating device. A double flue is arranged so that when the vulcanizer is heating up and requires the full force of the gasoline burners, the flame from the burners passes directly through the copper coil which contains the water. As the vulcanizer approaches vulcanizing temperature, a thermostat operates a damper, which automatically sends the flame around through another flue and finally comes to rest at a point which gives just enough heat to the copper coil of pipe to keep vulcanizing pressure.

**Manufactured by C. A. Shaler Co., Waupun, Wis. Price, $85 complete.**

## BRISTO SAFETY SET SCREW.

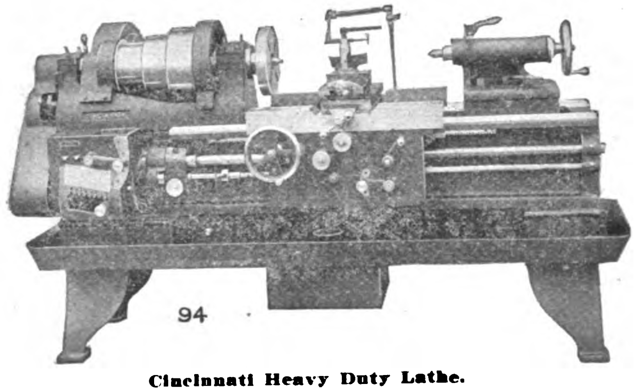
The feature of the Bristo Safety Set Screw is the dove-tailed slots or flutes into which the corresponding dove-tailed projections of the wrench fit. It is said that when these set screws are being tightened into place there is no tendency for the wrench to expand or split the screw, even if great pressure is applied to the handle of the wrench, but instead there is a tendency for the wrench to contract the screw on account of the angles at which the faces of the flutes and slots bear against each other.

**Manufactured by the Bristol Co., Waterbury, Conn. Prices for standard and special screws sent upon request. Write for samples.**

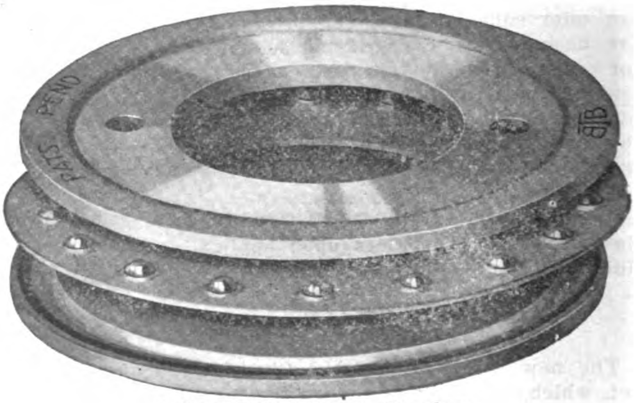
## BALL THRUST BEARING.

The Bailey ball thrust bearing is designed for Ford and Chevrolet 490 cars. In these cars the thrust of the drive gear is taken up by steel washers having a sliding contact. If for any reason these washers wear thin the drive gear is allowed to slip away from the pinion; the gears then being partially out of mesh, the drive is taken on one tooth instead of two and on the weak part of the tooth. This may cause the gears to strip or break, resulting in other axle trouble. If this happens replacement is necessary. It is the function of the Bailey ball thrust bearing to take up this thrust. Our two illustrations clearly show the construction and application of this bearing.

**Distributed by Ahlberg Bearing Co., 2636 Michigan Ave., Chicago, Ill. Prices upon application.**



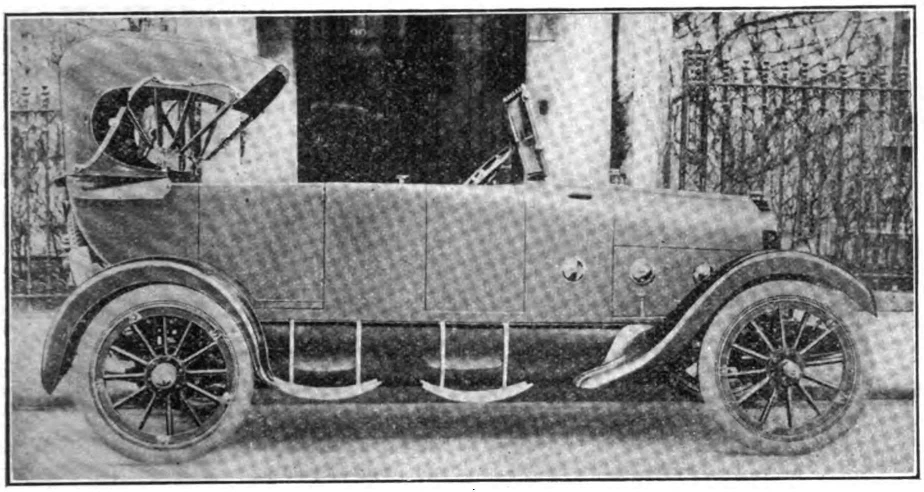
Cincinnati Heavy Duty Lathe.



Bailey Ball Thrust Bearing.

# ROADSTER WITHIN TOURING CAR

## Carmm Body, a Convertible Device, Forerunner of the 1918 Vogue in Automobile Coach Work



**Carmm Tonneau Extension Unfolded, Making Touring Car Body of Foreign Lines and Distinctive Appearance.**

THE American Motors, Inc., makers of the American Six, will market the new Carmm convertible body. This body, invented by a native of Buenos Aires, of the name which it bears, is convertible into either a roadster, five-passenger or seven-passenger body in a few minutes.

The convertible arrangement is all confined behind the front seats, which are of standard design. When folded the car is a true roadster type and when opened up it has the appearance of a touring car.

The makers claim that the construction is so safe and simple that it can be manipulated by a child. It can be made to fit any chassis from a Ford to an extreme wheelbase. There is nothing odd about its appearance, and, when folded into the different sizes it affords the same comfort and convenience for the occupants as standard bodies.

When in roadster form a simple adjustment releases the rear end of the body so that it can be instantly dropped back, forming the tonneau for a five or seven-passenger body. The doors are folded compactly into the seats and can be opened either in or out.

The American Motors, Inc., plans to produce the bodies on a large scale, and it is also intended to grant the privilege to manufacturers to build under the Carmm patents.

### PAMPHLETS AND LITERATURE.

"Fifteen Hundred Good Tools" is the title of tool book No 13 issued by Goodell-Pratt Company of Greenfield, Mass. This great little book is 3¾ inches by 5½ inches, contains 432 pages and is fully illustrated. Not only is this book useful as a catalogue, but also as a reference. This book is free to everyone sending their name and address to Goodell-Pratt Company, Greenfield, Mass.

The June issue of "Elgin Progress," the house organ of the Elgin Motor Car Corporation, Chicago, Ill., styled "The Car Beautiful," contains many pictures, showing graphically the extent to which the business has been built up in the short space of 12 months.

"Nature Pours Riches upon U. S. A." is a clever wonder story of facts on the abundance vouchsafed to this land of plenty, appearing in the Winton house organ, "The Auto Era," for June. A decided help in selling Liberty bonds.

Auto-Suggestions for June, Marietta, O., announces a window display contest.

With the idea of promoting general interest in the factory and to avoid misunderstandings, the Greenfield Tap and Die Corporation of Greenfield, Mass., have issued a 32 page manual, which contains instruction and information for employees working in their various plants. In this interesting booklet a helpful spirit of co-operation is evidenced.

The Prest-O-Lite Co., Inc., Indianapolis, Ind., has issued a new catalogue of Prest-O-Lite process, apparatus for oxy-acetylen welding and cutting. It contains a complete line of apparatus covering the widest ranges of welding and cutting work.

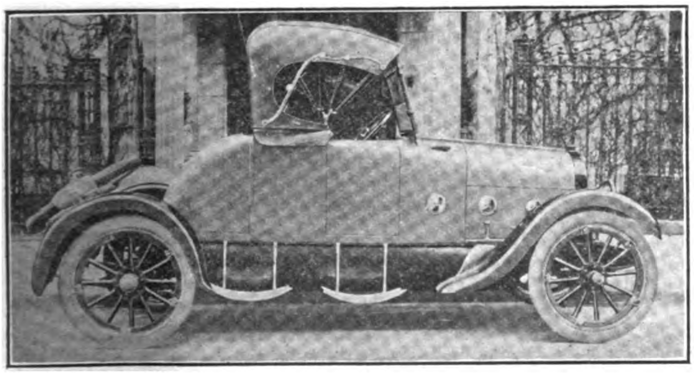
### BARRETT CO. ISSUES INTERESTING BOOKLETS.

"How a Tarvia Macadam Roadway Is Constructed," "Tarvia Preserves Roads —Prevents Dust," "Tarvia X" and "Tarvia B" are the respective titles of four interesting booklets just issued by the Barrett Co., 17 Battery place, New York.

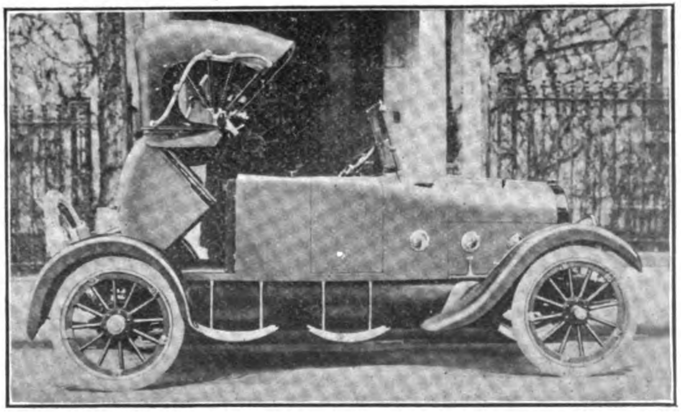
The first booklet, as its name implies, gives an interesting description of how a macadam roadway is constructed and the important part that tarvia plays in the work. Over 26 illustrations show the work in progress from start to finish. The other booklets are mainly devoted to excellent pictures of modern highways and boulevards in many parts of the country which have been finished with the tarvia products.

### A-C PLUGS SHINE IN RACES.

A-C Plugs at the Cincinnati races on Memorial Day, confirmed their wonderful performance at Uniontown on May 10. They were used for equipment on four cars in the big race, all four of which finished. Vail, who ran second, used A-C Plugs, preceding all other cars equipped with American made plugs. In the dealers' race the Hudson finished first and the Maxwell third, equipped with A-C Plugs.



**Folded Into Roadster Form—Device Controlled by American Motors, Inc., New York.**



**Exemplifying Carmm Body Alteration.**

# AGENCIES RECENTLY APPOINTED.

**Add to and Correct Your Mailing List of Pleasure Car and Other Dealers—Symbol * Indicates Commercial Vehicle.**

### ALABAMA.

- **Birmingham**—Overland, The Overland Motor Car Co.

### ARIZONA.

- **Phenix**—Dodge, McArthur Brothers, Central Ave. and Madison St.
  - Jeffrey, McArthur Brothers, Central Ave. and Madison St.
  - Packard, McArthur Brothers, Central Ave. and Madison St.

### CALIFORNIA.

- **Atascadero**—KisselKar, The Atascadero Mercantile Co.
- **Corcoran**—Oldsmobile, The Ford Garage.
- **Hanford**—Cadillac, A. F. Patnott.
  - Oakland, A. F. Patnott.
- **Los Angeles**—Detroiter, Turner-Whitford.
  - *Koehler, H. G. Pendell.
- **San Diego**—King, C. E. Nichols Motor Co.
- **San Jose**—KisselKar, Consolidated Garage Co.
- **San Luis Obispo**—King, Reeves & Adams.
- **San Francisco**—Davis, Matheson Motor Car Co.

### COLORADO.

- **Ft. Collins**—King, H. C. Bradley.
- **Trinidad**—KisselKar, William & Easley.
  - Studebaker, The C. M. Sullivan Auto Sales Co., 601 North Commercial St.

### CONNECTICUT.

- **Danielson**—KisselKar, Frank Davis & Sons.
- **New Haven**—*Koehler, Paul Ulizio, 60 Franklin St.

### DELAWARE.

- **Bridgeville**—*Koehler, Bridgeville Garage, Cannon St.

### DISTRICT OF COLUMBIA.

- **Washington**—Roamer, The Jennings Motor Sales Corp., 1315 North Ave.

### IDAHO.

- **Burley**—KisselKar, Joseph Wood.
- **Hagerman**—Maibohm, The Hageman Garage Co.
- **Idaho Falls**—KisselKar, N. D. Kay.
- **Lewiston**—Chandler, Fifth Street Garage.
- **Moscow**—Studebaker, C. T. Johnson.
- **Shoshone**—Stanley, Fred J. Hill.
- **Wallace**—*Western, Geo. H. Garrett.

### ILLINOIS.

- **Chicago**—Pathfinder, J. H. Stacy, 2210 Michigan Ave.
- **Decatur**—KisselKar, J. H. Howard.
- **Evanston**—Dort, Harry Osborne, South Side Garage.
- **Hebron**—Dodge, John J. White.
- **La Place**—*Koehler, The La France Garage.
- **Ottawa**—Overland, The Overland Williams Co., Duncan building.
  - Willys-Knight, The Overland Williams Co., Duncan building.
- **Rockford**—Hupmobile, H. V. Gleason.
- **Sherrard**—Maxwell, Sam Clark, Postoffice building.
  - Studebaker, Sam Clark, Postoffice building.

### INDIANA.

- **Auburn**—Ford, G. S. Baxter.
- **Brazil**—Saxon, A. F. Wall.
- **Evansville**—KisselKar, J. F. Charley Auto Co.
- **Ft. Wayne**—Oldsmobile, A. G. Shook.
- **Kokomo**—KisselKar, Auto Inn.
  - Overland, A. F. Kohls.
- **La Porte**—Reo, A. G. Haight.
- **South Bend**—Cadillac, The Cadillac Motor Sales Co., 213-217 South Lafayette St.
  - Dodge, The Cadillac Motor Sales Co., 213-217 South Lafayette St.
  - Reo, The Cadillac Motor Sales Co., 213-217 South Lafayette St.

### IOWA.

- **Des Moines**—KisselKar, The D. & S. Motor Co.

### KENTUCKY.

- **Lexington**—Stanley, The Mammoth Car Co.
  - *Koehler, E. B. Fox, Box 425.

### LOUISIANA.

- **New Orleans**—*Gramm Bernstein, M. G. Bernin.

### MAINE.

- **Bangor**—Dort, Utterback-Gleason Co., 27 Franklin St.

### MARYLAND.

- **Baltimore**—Pullman, The Richmond Motor Co., 122 W. Mount Royal Ave.
  - *Koehler, Service Garage, 1012 West Lexington St.

### MASSACHUSETTS.

- **Boston**—Disbrow, G. L. Smith.
- **Springfield**—Ford, The Auto Parts Repair Co.
- **Worcester**—Hupmobile, Blake-Libby Co., 703 Main St.

### MICHIGAN.

- **Battle Creek**—Chandler, The Independent Garage Co.
- **Benton Harbor**—Hirch, Orva Slack.
- **Chapin**—King, H. K. Gilson.
- **Detroit**—Detroiter, Smith-Glines Sales Co., 857 Grindley Arcade.
  - Doble (Steam Car), The Owen Graham & Starkweather Co., 2845 East Grand Boulevard.
  - Pathfinder, Brown-Feyes Co., Grindley Arcade.
  - *Koehler, Don M. Harris, 534 W. Lafayette St.
- **Iron Mountain**—Ford, The Hooper Motor Co.
- **Middletown**—King, The Economy Garage.
- **Petoskey**—Republic, Earl Dennis.

### MINNESOTA.

- **Fulda**—KisselKar, C. F. Coburn.
- **Hector**—KisselKar, T. C. Albrecht.
  - *Koehler, T. C. Albrecht.
- **Long Lake**—KisselKar, S. Rettinger.
- **Minneapolis**—Scripps-Booth, Pelton Motors Co., 45-49 Tenth St.
- **Sanborn**—KisselKar, P. J. Pint.
  - *Koehler, P. J. Pint.
- **Springfield**—KisselKar, F. H. Wisl.

### MISSOURI.

- **Kansas City**—Simplex Trailers, Maxwell-Ford Sales Co.

### NEW JERSEY.

- **Newark**—Stanley, E. C. Schmidt, 238 Central Ave.
- **Newton**—*Koehler, Kishpaugh Garage.

### NEW YORK.

- **Brooklyn**—Hall, Edwards Sales and Service Co., 10 Howard Ave.
- **Buffalo**—KisselKar, Howard B. Smith, Inc., 1127 Broadway.
  - Overland, John Winkler and John Wade, 1127 Broadway.
  - Willys-Knight, John Winkler and John Wade, 1127 Broadway.
- **Elizabethtown**—*Koehler, Elizabethtown Garage.
- **New York City**—Marmon, The Marmon Automobile Co., Inc.
- **Poughkeepsie**—*Koehler, W. H. Frost, Box 538.
- **Saratoga Springs**—*Koehler, Saratoga Sales Co.

### NORTH CAROLINA.

- **Hickory**—KisselKar, Abernathy Hardware Co.

### NEBRASKA.

- **Central City**—Crow-Elkhart, F. R. Linderman.
- **Fairbury**—Harroun, Synder & Friesen.
  - Lexington, Synder & Friesen.

### OHIO.

- **Cleveland**—Nelson, Chant Hinkel.
  - *Niles, The Allen Motor Sales Co., 6125 Euclid Ave.
- **Columbus**—Packard, Packard-Columbus Motor Co.
- **Findlay**—*Koehler, Kirk & Flemion.
- **Ironton**—*Koehler, Ketler Buggy Co.
- **Toledo**—Elgin, The Van Wormer Auto Co., 218 Huron St.
- **Youngstown**—*Stewart, Reliable Truck Sales Co.

### OKLAHOMA.

- **Muskogee**—Stanley, W. T. Cole & Son.

### OREGON.

- **Portland**—Premier, Mitchell & Wallingford.

### PENNSYLVANIA.

- **Allentown**—Stanley, The Krauss Auto Co.
- **Elderton**—KisselKar, M. T. Schall.
- **Greencastle**—*Koehler, Lininger's Garage.
  - *Koehler, Davenny & Baskins.
- **Philadelphia**—Disbrow, E. L. Smith.
- **Pittsburg**—Detroiter, Schusler-Ramsay Co.
  - Harroun, The Wyskoff Motor Sales Co.
- **Scottsdale**—*Koehler, United States Casket Co.
- **Wilkes-Barre**—*Koehler, Gibbs Motor Car Co., 519 S. Main St.

### SOUTH CAROLINA.

- **Anderson**—*Koehler, Anderson Ice Co.
- **Columbus**—KisselKar, Alfred Wallace, 1714 Senate St.

### TENNESSEE.

- **Knoxville**—KisselKar, Cole Motor Sales Co.
- **Memphis**—KisselKar, Lockwood & Co.

### TEXAS.

- **Dallas**—Maxwell, The Burton Rountree Co.
- **Ft. Worth**—Chalmers, James Maddox, 604 Commerce St.
  - *Kelly, Caswell Brothers.
- **San Antonio**—Ford, B. H. Johnston.
  - *Masger, Leo De Hymel, 315 West Commerce St.
- **Vernon**—King, William Kelton.
- **Wichita Falls**—Pierce-Arrow, Karl Mossbacker.

### UTAH.

- **Provo**—KisselKar, W. H. White.

### VIRGINIA.

- **Richmond**—Disbow, E. L. Smith.
- **Winchester**—*Koehler, M. R. Strode.

### WASHINGTON.

- **Seattle**—Chalmers, W. T. Patten Motor Co.
  - Liberty, F. H. Barshar.
  - Premier, W. T. Patten Motor Co.
  - *Hendrick, R. G. Barton.
- **Spokane**—Moon, Scripps-Booth Distributing Co.
  - Scripps-Booth, Herman J. Rossi Co., 1122 Sprague St.
- **Tacoma**—Hackett, O. H. Mack.

### WEST VIRGINIA.

- **Charleston**—KisselKar, B. E. Proctor, Jr.
- **Everett**—Chevrolet, W. S. Dulmage Co.
  - Oldsmobile, W. F. Steffy.

### WASHINGTON.

- **Tacoma**—Ford, J. W. Capek & Co.

### WISCONSIN.

- **Oshkosh**—King, John Lents, 63 High St.

# *The Princess 1917 4-36 Model*

### SPECIFICATIONS.

**Wheelbase, 108 inches.**

**Engine, four-cylinder, 3¾x4¼, en bloc, 36 h. p.**

**Delco, two-unit electrical starting and lighting system, Splitdorf ignition.**

**Carburetor, Schebler.**

**Cooling, thermo-syphon system.**

**Clutch, single steel plate between fabric discs.**

**Transmission, Grant-Lees, three speeds.**

**Left hand drive, centre control.**

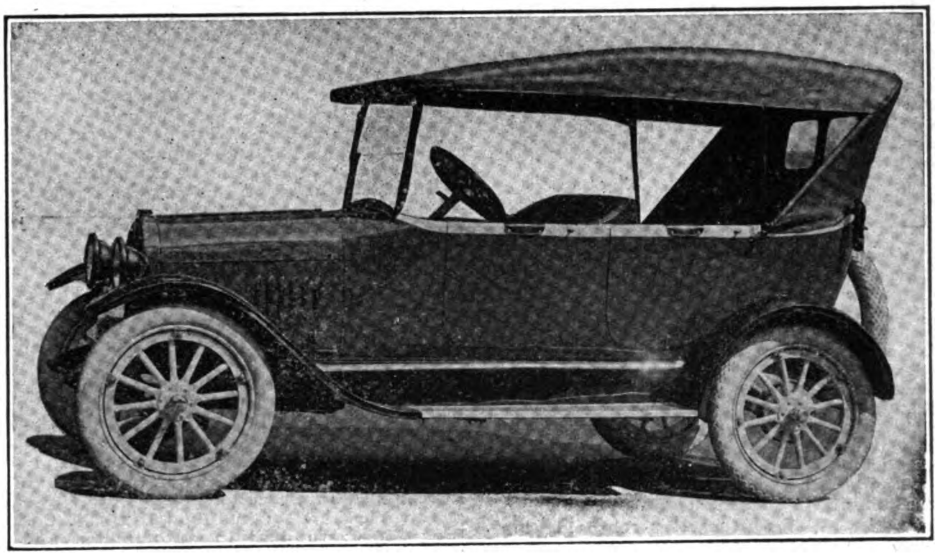
**Lubrication, force feed and splash.**

**Rear axle, full floating.**

**Springs, front, semi-elliptic, rear, ¾ elliptic.**

**Wheels, artillery, demountable rims.**

**Tires, 23x3½, smooth front, non-skid rear.**



**Princess Four-Thirty-Six, Five-Passenger Touring Car, $775.**

**The Princess Car Is Manufactured by the Princess Motor Car Corporation, Detroit, Mich. Three Bodies Are Offered in the 1917 Line, a Five-Passenger Touring Car, a Three-Passenger Roadster and a Speedster. The Manufacturers Observe the Growing Trend of Users' Demand for More Roominess of Body, and Announce Upholstering and Other Appointments on a Corresponding Scale of Satisfaction.**

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# NEW CONCERNS RECENTLY INCORPORATED.

## Monthly Record of New Business Houses for which Charters Have Been Issued In the Various States and Classified According To Nature of Business.

### Parts and Fittings Makers Incorporated

**Los Angeles, Cal.;** Peerless Wheel Co. of California; $15,000; to manufacture automobile wheels; Fred E. Powers, George E. Somarindyk, R. A. Armstrong.

**Bridgeport, Conn.;** Stratfield Motors Co.; $10,000; James A. McElroy, Leo C. McElroy, Louis J. Reilly.

**Dover, Del.;** Auto Betterment Corp.; $2,000,000; to manufacture patented articles for use on automobiles; Arthur W. Britton, Samuel B. Howard, Louis H. Gumther.

**Dover, Del.;** Stewart Wire Wheel Corp.; $500,000; to manufacture wire wheels for automobiles; J. B. Bailey, Arthur J. Kingsbury.

**Chicago, Ill.;** Great Lakes Electric Mfg. Co.; $25,000; to manufacture engines, motors and generators.

**Chicago, Ill.;** L. D. Wells Motor Co.; $1000; R. D. Stenenson, E. G. Southworth, M. A. Allen.

**Springfield, Mass.;** Byrnes-Eldridge Motor Co.; $10,000; George Goodrich Byrnes, Zebina Harold Eldridge.

**Springfield, Mass.;** Stockbridge Body Co.; $20,000; James P. Smith, president; Raymond S. Smith, treasurer; L. McC. Smith.

**Detroit, Mich.;** H-B-W Manufacturing and Engineering Co.; $100,000; to manufacture rotary pumps; William A. Hatcher, Allie Buechler, O. H. L. Wernicke.

**Detroit, Mich.;** Oliver Auto Devices, Inc.; $100,000; to manufacture automobile devices; D. F. Oliver, W. E. Metzger, H. H. Crawford.

**Grand Rapids, Mich.;** Service Auto Wheel Co.; $10,000; to manufacture demountable wheels for automobiles; Russell A. Bates, Thomas Vander Mey, H. E. Draa.

**Brooklyn, N. Y.;** The Byk Motor Corp.; $25,000; Leo P. Byk, Harry Brener, Tina Brener.

**Buffalo, N. Y.;** Empire Auto Trailer Co.; $50,000; to manufacture motors, vehicles; C. B. Howell, Frederick Tucker, Joseph Kazubowski.

**Goshen, N. Y.;** F. C. Hock Motor Corp.; $10,000; F. C. Hock, R. J. Hock, G. F. Griggs.

**New York, N. Y.;** Dunlop Rubber Co.; $1000; to manufacture motors, cars, carriages, tires; Otto Braunwarth, L. A. Braunwarth, Albert Bracht.

**New York, N. Y.;** Hurlburt Gasoline Turbine Engine Co., Inc.; $5000; to manufacture automobile motors, turbine engines, cars; G. P. Hurlburt, L. M. Weiller, H. H. Mass.

**New York, N. Y.;** Keystone Resilient Wheel Co.; $600,000; to manufacture, sell and deal in and with resilient wheels for automobiles; H. E. Latter, C. L. Rimlinger, C. M. Enger.

**New York, N. Y.;** Kleppe, Ostevold & Co., Inc.; $25,000; to manufacture motors, engines, machines; A. Kleppe, N. N. Kleppe, H. Hervik.

**New York, N. Y.;** Meldrum Motor Corp.; $25,000; to manufacture motors and engines; Alfred S. Meldrum, John F. Hattman, Edward A. More.

**Wilmington, N. Y.;** Midwest Motor Co.; $1,000,000; to manufacture motors of all kinds.

**Cincinnati, O.;** The Columbia Motor Sales Co.; $10,000; Morris James Dale, Ben B. Dale, C. B. Stubert, Ralph E. Sudler.

**Cleveland, O.;** Perfection Auto Parts Co.; $25,000; Sidney A. Thorman, John P. Kalina, Frances Harris, Louis Novario, John A. Novario.

**Columbus, O.;** Jewett Truck Attachment Co.; $25,000; to manufacture and market the Jewett truck attachment; William Wright, William Schroeder.

**Youngstown, O.;** The Hoffmaster-Gifford Motor Co.; $20,000; L. P. Hoffmaster, L. B. Hoffmaster, Charles A. Gifford, A. W. Gifford, Guy T. Ohl.

**Philadelphia, Penn.;** Levene Motor Co.; $20,000; George Levene.

**Scranton, Penn.;** Bates Motor Co.; $15,000; H. R. Crane.

**Dallas, Tex.;** Texas Unitractor Co.; $750; to manufacture tractor attachments for Ford cars; U. C. Slaughter, Jr., J. B. Hartsough, Walter G. Miller.

**San Antonio, Tex.;** Johnson Motor Co.; $15,000; H. Johnson, Russell C. Hill, W. S. Langford.

**New Cumberland, W. Va.;** Jester Motor Lens Co.; $100,000; to manufacture and sell refracting motor lenses; Ronald B. Jester, J. E. Brandon, G. L. Bambrick, J. A. Brandon, S. B. Bambrick.

**Seymour, Wis.;** The Brandt Auto and Implement Co.; $20,000; August Brandt, Louis Lorenz, H. F. Hall.

### Newly Organized Manufacturers of Automobiles and Trucks

**Beloit, Wis.;** Warner Mfg. Co.; $50,000; to manufacture trailers and similar vehicles; A. P. Warner, L. A. Avery, M. O. Mouat, J. L. Westlake.

**Clintonville, Wis.;** Wisconsin Duplex Auto Co.; $500,000; to manufacture motor vehicles.

### Newly Organized Manufacturers of Cars

**Dover, Del.;** Bessemer Motor Truck Co.; $2,000,000; to manufacture automobile trucks of different kinds; C. L. Rimlinger, Clement M. Enger, M. B. Haywood.

**Dover, Del.;** Beggs Motor Car Co.; $5,500,000; to manufacture, sell and deal in and with automobiles and parts; Herbert E. Latter, C. L. Rimlinger, Clement M. Enger.

**Dover, Del.;** Hurd Tire Corp.; $150,000; to manufacture, buy, sell and deal in automobiles, motor engines; G. A. Wagner, A. G. Hurd, G. L. Hurd.

**Wilmington, Del.;** Finely-Robinston Co., Inc.; $1,250,000; to manufacture, sell and deal in automobiles; H. E. Latter, C. L. Rinlinger, C. M. Enger.

**Wilmington, Del.;** Merriman Truck and Tractor Co.; $1,000,000; to manufacture trucks and tractors.

**Wilmington, Del.;** Phenox Truckmakers, Inc.; $25,000; to manufacture and sell trucks.

**Wilmington, Del.;** Virginia and Ohio Mfg. Co.; $50,000; to manufacture and deal in internal engines.

**Lafayette, Ind.;** Mills Electric Co.; $100,000; to manufacture automobiles, parts and accessories; Byron J. Mills, Herbert A. Keller, Eldon L. Lewis.

**Worcester, Mass.;** Thibert Mfg. Co.; $50,000; to manufacture automobiles; Napoleon R. Thibert, president and treasurer.

**Detroit, Mich.;** The Armored Motor Car Co.; $100,000; W. A. Ross, Webb C. Artz, A. Lester Nancourt.

**Detroit, Mich.;** Jahn Semi-Trailer Co.; $5000; Lillian K. Jahn, Arthur J. Kring, William M. Jahn.

**Passaic, N. J.;** Forbes Cruikshank, Inc.; $25,000; to manufacture and deal in automobiles and auto accessories; Cyril P. Forbes, John Pomfret, Jr., Alexander G. Cruikshank.

**Delhi, N. Y.;** Russell Archibald Co.; $5000; to manufacture automobiles and trucks; Russell Archibald, Carrie M. Archibald, Sloan Archibald.

**New York, N. Y.;** Ghent Motor Co.; $200,000; to manufacture and sell motor vehicles.

**New York, N. Y.;** Herman Truck and Tractor Co.; $1,000,000; to manufacture trucks, tractors; W. F. O'Keege, George G. Steigler, B. F. Wright.

**New York, N. Y.;** Murray Motor Car Co. of New York; $10,000; to manufacture automobiles, parts and accessories; M. W. Smith, A. F. Cavacho, R. S. Locke.

**New York, N. Y.;** National Rubber Company (Boston branch); $2000; to manufacture automobiles and tires; F. R. Hansell, J. Vernon Pimm, S. C. Seymour.

**New York, N. Y.;** Pan-American Motors Corp.; $403,700; to manufacture automobiles.

**Canton, O.;** Rim Co.; $100,000; will establish a plant to manufacture automobile rims and automobile specialties; A. R. Turnbull.

## Dealers in Automobiles and Motor Trucks

**Ft. Smith, Ark.;** The Federal Truck Co.; $10,000; Fred B. Johnston, Will Duboid, J. F. McGehee.

**Los Angeles, Cal.;** The United Motors Corp.; $1,000,000; to operate a plant; H. M. Loud, T. A. Russell.

**Dover, Del.;** The Preston Motor Car Co.; $1,000,000.

**Dover, Del.;** Reya Motor Co.; $800,000; C. Fearon, Ferris Giles, K. M. Dougherty; to manufacture motors of all kinds.

**Wilmington, Del.;** Midwest Motor Co.; $1,000,000; K. M. Dougherty, Ferris Giles, C. Fearon.

**Chicago, Ill.;** Earl Motor Truck Co.; $2500; Frank Dawson, Jirah Drussell, Harry Johnston.

**Chicago, Ill.;** Lamson Truck and Tractor Co.; $2,000,000; Grover D. Harris, Elliott J. Perkins, W. D. Bradfield, B. C. Ludley, B. R. Hoffman.

**Redkey, Ind.;** Redkey Auto Co.; $3000; A. E. Shew, H. C. Martin, J. L. Morris.

**Durant, Ia.;** Cooper Automobile Co.; $10,000; C. L. Cooper, Cecil A. Bilbo, Frank H. White.

**Boston, Mass.;** Kim Distributing Co.; $50,000; to deal in automobiles and accessories; Benjamin K. Hall, Robert M. Clark, A. Farley.

**Boston, Mass.;** Scripps-Booth Motor Car Co.; $10,000; Edward A. Robbins, Joseph F. Lancaster, Isabelle Laing.

**Detroit, Mich.;** Axam-McLean Co.; $50,000; to deal in automobiles and accessories; Clyde H. McLean, Hugh McLean, Frederick Axam.

**Newark, N. J.;** Koplin Motor Sales Corp.; 164 Market street; $100,000; to conduct an automobile business.

**Newark, N. J.;** Tenrose Holding Co., 9 Clinton street; $50,000; to deal in automobiles.

**Plainfield, N. J.;** American Sales Corp.; Grand avenue and West Front street; $25,000; to deal in cars and automobiles.

**Trenton, N. J.;** Nash Motor Co.; 26 West State street; $190,000; to conduct a general automobile business.

**Brooklyn, N. Y.;** Keap Auto Trucking Co., Inc.; $10,000; to do general trucking; P. Cohen, O. Seligmann, R. B. Smith.

**Fabius, N. Y.;** New Era Double Tire Co., Inc.; $5000; to deal in autos and tires; W. W. and H. P. Kupperman, G. Rubenstein.

**Elmira, N. Y.;** Ross Vulcanizing and Battery Co., Inc.; $10,000; general garage business; to deal in tires, batteries and repairs; H. M. Swartz, L. W. Jennison, T. M. Losie.

**Brooklyn, N. Y.;** Seal Franklin Auto Corp.; $20,000; to deal in automobiles and to manufacture same; Hubert F. Franklin, Ralph S. Scott, Thomas H. Clarke.

**New York, N. Y.;** Automobile Transparent License Co.; $300,000; devices, plans and methods for illuminating licenses, to deal in automobiles; G. Tiernan, F. H. Purcelle, J. B. Purcelle.

**New York, N. Y.;** Audubon Taxi Cab Co., Inc.; $5000; to deal in automobiles and taxicabs; M. Prunier, M. H. and W. C. McMahon.

**New York, N. Y.;** Industrial Export Co., Inc.; $10,000; to deal in automobiles; R. H. Gay, H. W. Goddard, M. S. Schless.

**New York, N. Y.;** Murray-McIntyre Co.; $15,000; to deal in autos, tools and appliances; Walter J. Murray, William J. McIntyre, Gerald H. Murphy.

**New York, N. Y.;** Republic Garage Co., Inc.; $45,000; to deal in automobiles and to conduct a garage; P. Litchfield, R. Cholmeley-Jones, J. B. Gider.

**New York, N. Y.;** Winett Operating Co.; $150,000; to deal in vehicles and to manufacture machinery of all kinds; J. A. Reilly, M. I. Buchanan, L. Hartman.

**Akron, O.;** The North American Motor Vehicle Co.; $25,000; Fred C. Wood, J. B. Sieby, D. H. Mackay, P. A. Martineau.

**Cleveland, O.;** Gilman Motor Trucking Co.; $25,000; H. E. Gilman, A. C. Gilman.

**Cincinnati, O.;** The Automobile Country Club Co.; $500; Charles Lybrand Benifield, W. T. Foley, William T. Calerdine, G. M. Allen, F. H. Strietmann.

**Cleveland, O.;** The Austin Automobile Co.; H. E. Westfall, H. M. Bennett, James Judge, E. K. Berwine, N. Bates.

**Toledo, O.;** Toledo Kelly Convertible Auto Truck Co.; $5000; George L. Bowman.

**Vermillion, O.;** The Bristol Co.; $10,000; to deal in motor vehicles; R. E. Bristol, O. E. Kemp, Arlo Casebere, Albert Croll, G. D. Zimmerman.

**Philadelphia, Penn.;** Cunningham Bros. Co.; $10,000; to deal in automobiles and motor trucks; F. R. Hansell, J. Varnon Pimm, S. C. Seymour.

**Denton, Tex.;** George Fritz & Co.; $5000; to engage in automobile business; J. L. Wright, George Fritz, H. V. Hennen.

**El Paso, Tex.;** Merchants Auto Express Co.; $20,000; M. L. Naquin, John B. Clifford, E. A. Young.

**Seattle, Wash.;** Zbinden & Wood Motor Car Co.; $10,000; Julius Zbinden, Fred A. Wood, Ray Zbinden.

**Madison, Wis.;** Wisconsin Truck and Tractor Co.; $1000; Oscar Toebas, Charles E. Marks, Oscar Rennebohm.

**Milwaukee, Wis.;** The Gentz Truck Sales Co.; $10,000; Theodore Gentz, H. P. Fleischer, O. G. Forsythe.

**Milwaukee, Wis.;** The Monson-Inbush Automobile Co.; $6000; Michael J. Monson, Ralph C. Inbush, Harriet C. Loeffler.

**Milwaukee, Wis.;** Netter-Heiser & Co.; $15,000; to sell Ford cars; W. M. Heiser, R. G. Herbeck.

**Racine, Wis.;** Racine Motor Truck Co.; $500,000; R. Piggins, F. Piggins, I. L. Miller.

## Garages and Repair Shops Newly Chartered.

**Bridgeport, Conn.;** Darling Garage, Inc.; $5000; John L. Darling, Mary E. Wiedemeeir, Rosa P. Darling.

**Dover, Del.;** Capital City Garage Co.; $25,000; to conduct garages; Harry M. Henderson, Frederick Loy, Patrick F. Cann, William R. Cann.

**Chicago, Ill.;** Excel Garage Co.; $5000; Joseph Schack, Edward B. Lucius, J. Scott Matthews.

**Grand Rapids, Mich.;** Lake Drive Auto Co.; $4000; to repair automobiles; Gillis Van Slugs, Martin A. Quincy, Peter Bolt.

**Jersey City, N. J.;** Van Vorst Garage, Inc., 15 Exchange Place; $50,000; to deal in automobiles and to conduct a garage business.

**Brooklyn, N. Y.;** Municipal Auto Garage and Machine Corp.; $10,000; to manufacture automobiles, autopeds, flying machines; Louie J. Harris, Alphonse Sterck, George Lunde.

**Forest Hills, N. Y.;** Forest Hills Auto Repair and Garage Co.; $5000; to operate taxicabs; Frank L. Kenny, Frank A. Kenny, Walter S. Mayer.

**Cleveland, O.;** The Euclid Garage Co.; $10,000; Alonzo M. Snyder, Horatio Ford, L. B. Davenport, G. M. Reilly, N. I. Young.

**Cleveland, O.;** The Hough Ninety-Third Garage Co.; $15,000; T. H. Bushnell, A. R. Dorn, Edward J. Charney, H. B. Altman, V. L. Gallinatt.

**Milwaukee, Wis.;** The Cyclone Garage Co.; $3000; Oscar Meyer, Edward Mueller, Rose Lewitt.

## Accessories, Equipment and Supplies

**Birmingham, Ala.;** The Southern Tire and Accessories Co.; $25,000; Solon Jacobs, J. T. Fenton, Evans Dunn.

**New Haven, Conn.;** Truck Tire Co.; $10,000; James A. Morris, J. Binney Tuttle, Edgar B. Pearl.

**Chicago, Ill.;** Serlin Tire Co.; $10,000; William Stapleton, Samuel B. Epstein, Edla Johnson.

**St. Louis, Mo.;** Lockford Auto Sales Co.; $2000; to conduct a general lock and automobile accessories business; C. de Witt Lukens, Lester I. Havmann.

**Indianapolis, Ind.;** The American Tire Distributing Co.; $25,000; O. E. Anthony, S. B. Selleck, J. L. McFarland.

**South Bend, Ind.;** The Security Tube Co.; $150,000; to manufacture tires and tubes; William P. Furey, Rae C. Blackmun, Joseph W. McInerny.

**Newark, N. J.;** National Motor Car Supply Co.; $5000; to deal in automobile equipment; Robert F. Reeve, James V. Fuller, Walter Kruttschnitt.

**New York, N. Y.;** Green Hand Signal Sales Corp.; $10,000; to deal in auto supply business; R. N. Rasquin, E. J. Tracey, W. V. Pascual.

**New York, N. Y.;** Carlisle Cord Tire Co.; $550,000; Frank R. Series, George F. Handel, Henry G. Wenzel, Jr.

**New York, N. Y.;** Manhattan Auto Paint Shop; $1000; to do general repairing and painting; Arthur Kraus, Mortimer Kane, Caroline Kane.

**New York, N. Y.;** Saxton Auto Accessory Co., Inc.; $100,000; Lionel D. Saxton, Thomas F. Hayes, John J. Fennell.

**New York, N. Y.;** Whinihan Brothers & Co.; $5000; to deal, sell and repair auto tires; Sylvester M. Whinihan, Paul K. Whinihan, Charles B. Brittin.

**Cleveland, O.;** Ideal Tire and Rubber Co.; $1,000,000; I. R. Davis, C. B. Hurd, R. C. Hurd, R. C. Worrell, A. S. Davies, M. R. Davies.

**Cleveland, O.;** The Lock-Fast Manufacturing Co.; $5000; to manufacture automobile accessories; Lad E. Krajci, Martin L. Sweeney, William A. Thomas, John G. Murphy.

**Philadelphia, Penn.;** Universal Industrial Corp.; $175,000; to manufacture automobile supplies of all kinds; F. Courtlandt Reamer, Jr., Carl E. Hilbers, Adeli Feige, Charles S. Witmar, A. R. Swaidmark.

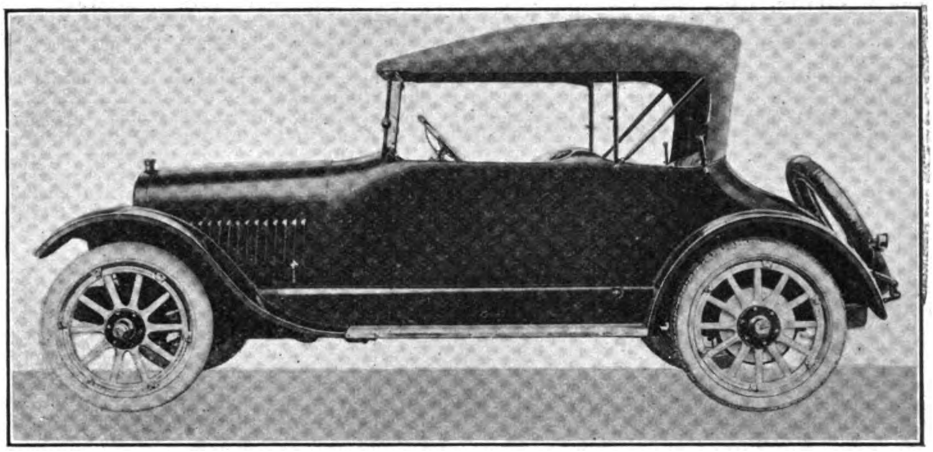
**Pittsburg, Penn.;** Auto Vulcanizing and Specialty Co.; $500,000; to manufacture and deal in vulcanizing rubber; Wilbur A. McCoy, W. N. Lofland, Charles N. Jones.

**Ft. Worth, Tex.;** Beale Auto Supply Co.; $7000; C. W. Beale, L. B. Isaacs, H. L. Agerton.

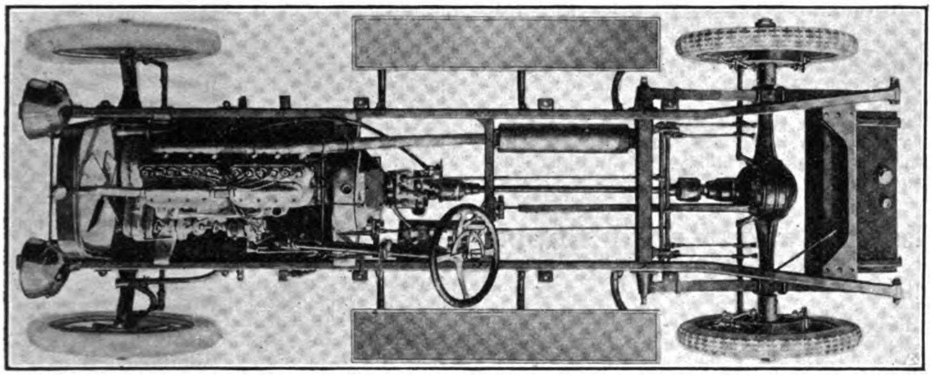
**Fort Worth, Tex.;** Robinson Tire and Vulcanizing Co.; $1000; T. E. Robinson, J. W. Minn, P. C. Garett.

# *The Chandler 1917 Light Six Roadster*

**Made by the Chandler Motor Car Co., Cleveland, O., and Described in Detail in the Automobile Journal of May 25, 1917.**



**Four-Passenger Chandler Roadster with Neatly Designed Body, Graceful Lines and Many Refinements.**



**Stripped Chassis Showing Compact Unit Power Plant and Frame Features Behind the Rear Axle.**

**CHANDLER LIGHT WEIGHT SIX ROADSTER.**

**Price, $1595.**
**Wheelbase, 123 inches.**
**Motor, six-cylinder.**
**Carburetor, water jacketed, float feed.**
**Magneto, Bosch high-tension, single system.**
**Clutch, disc.**
**Starting and lighting, Gray & Davis, two-unit.**
**Fuel feed, Stewart vacuum.**
**Lubrication, splash and force feed.**
**Springs, semi-elliptic.**
**Tires, 34x4.**
**Drive, left; control, centre.**

# NEW BUSINESS CONCERNS AND CHANGES OF NAMES.

## The Month's Record of Transfer of Ownerships and Opening of Garages, Agencies, Branches, Service Stations and Repairs Shops.

**Sacramento, Cal.;** Bridge & Jacobs Motor Co., Studebaker agents, has been taken over by J. J. Jacobs, who will continue the business under the title of J. J. Jacobs Motor Co.

**Cherry Valley, Ill.;** C. C. Maguire has purchased the garage formerly owned by Fitzgerald & Son.

**Chicago, Ill.;** The Stacy Automobile Co. has taken over the Pathfinder agency, formerly operated by James Motor Co. The company has opened a sales and service station at 2210 Michigan avenue.

**Cedar Rapids, Ia.;** J. J. Kadlec & Son have purchased the property and business of the Viktor Auto and Supply Co., which was formerly owned and operated by J. A. Viktor.

**Des Moines, Ia.;** The Hawkeye Tire Co. has changed its name to Hawkeye Tire and Rubber Co. and has increased its capital from $500,000 to $1,000,000.

**Des Moines, Ia.;** H. P. Pace has purchased the Trego-Baum Garage at 1717 West Grand avenue. The firm will be known as the Pace Auto Service and will operate a taxi service.

**Lewis, Ia.;** Pfaltzgraff Bros. has sold the business to John Borneman and Ben Nolte.

**Burlington, Kan.;** The Burlington Garage has been purchased by James H. Campbell.

**Harlan, Kan.;** The Thompson Garage has been taken over by Ernest Watts.

**Kingsley, Kan.;** Frank Dixon has purchased the business of Lancaster & Bittner.

**Adrian, Mich.;** F. D. Truck and Auto Co. has been formed as a successor of the Forduplex Co.

**Bratsberg, Minn.;** S. A. Byholt has taken over the Overland store building.

**Curtis, Neb.;** C. M. Carlsn has taken over the business of the Western Tire and Auto Co.

**Franklin, Neb.;** F. M. Bonham has purchased a half interest in the Maxwell Garage, becoming a partner with his brother, B. R. Bonham.

**West Point, Neb.;** William and Charles Nielke have purchased the garage of Charles Juracek.

**Congress, O.;** Clifford Martin has purchased the Whitmore property.

**Nowata, Okla.;** R. S. Robinson has purchased the Nowata Garage and will operate it.

**Philadelphia, Penn.;** The Bell Motor Co., located at Broad and Mt. Vernon streets, has taken over the distributing agency for the Davis cars.

**Philadelphia, Penn.;** The Walz Auto Supply Co. has taken over the business of the Electric Starter Sales Co.

**Hurley, S. D.;** The Hurley Garage has been taken over by Herb Lakings.

**Ellsworth, Wis.;** The J. A. Peterson Garage has been taken over by A. C. Sanford.

**Fennimore, Wis.;** Logan Fisher has sold his garage to Isaac Lomas.

**Fox Lake, Wis.;** The Murphy Garage has been taken over by W. D. Mahoney, who has purchased the entire plant.

**Kenosha, Wis.;** William C. Fisher has purchased an interest in the Hill Garage.

**Marion, Wis.;** Grover Kumradt has purchased the garage business of the Marion Implement Co.

**Middleton, Wis.;** The Pierstorff Garage has been purchased by Walsh Bros.

**Monroe, Wis.;** A. D. Mather has sold his interest in the Mather, Buehler & Barmore to his two partners.

**Plymouth, Wis.;** H. C. Sweeting has taken over the interests of A. J. Hildebrand in the Buick Garage.

## New Business Locations and Removals.

**Los Angeles, Cal.;** Beardsley Electric Co., 1250-60 W. Seventh street, has moved to Hollingworth building.

**Los Angeles, Cal.;** Homer Motors Co., San Findo road, near Arvia street, has moved to 431 Investment building.

**Los Angeles, Cal.;** Kelly Springfield Motor Truck Co., 1036 S. Grand avenue, has removed to 1911 W. Seventh street.

**San Francisco, Cal.;** American Motor Co., 276 Golden Gate avenue, has moved to

3893 24th street.

**San Francisco, Cal.;** United States Tire Co. has moved to 60 Tremont street. The company was formerly located at 636 Van Ness avenue.

**San Francisco, Cal.;** Weeks-Lovell Automobile Co., 550 Golden Gate avenue, has moved to Waterville, Cal.

**South Pasadena, Cal.;** Washburn Bros., 907 Fair Oaks avenue, has removed to box 450.

**Hartford, Conn.;** The Fuller Storage Battery Co., formerly of 331 Church street, has removed to the new sales and service building at 100 Ann street.

**Hartford, Conn.;** The General Motors Truck Co. has removed to new quarters at 11 Main street, formerly occupied by Kingsbury & Wetherell, Inc.

**Chicago, Ill.;** Angsten-Koch Co., 215 Englewood avenue, Englewood station, has moved to 4068 Princeton avenue, Stock Yards station.

**Chicago, Ill.;** Auto Sheet Metal Works. 2420 W. 22nd street, has moved to 1326 Michigan avenue.

**Chicago, Ill.;** W. E. Kenyon, distributor of Stewart trucks, has moved to permanent quarters at 1714 Michigan avenue.

**Chicago, Ill.,** Sunderland Mfg. Co., 61 E. 24th street, has moved to 600 West 22nd street.

**Chicago, Ill.;** Rectifier Co. of America, has moved to 1401 W. Jackson street. The company was formerly located at Rand McNally building.

**Chicago, Ill.;** Rex Battery Co., 2505 South State street, has moved to 3031 Michigan avenue, Armoor station.

**Chicago, Ill.;** Schillo Motor Sales Co., 1452 Michigan avenue, has removed to 3625 Wabash avenue.

**Chicago, Ill.;** Siegmund Baylis Truck Co., 3029 Michigan avenue, has moved to 315 N. Ada street.

**Chicago, Ill.;** The Service Motor Truck Co. has moved to 2617 Wabash avenue.

**Chicago, Ill.;** Yale Mfg. Co. has moved from 420 S. Clinton street to 467 E. Ontario street.

**Moline, Ill.;** The Victor Storage Battery Co. has removed from Rock Island and is now located at Seventh street and Fourth avenue.

**Toulon, Ill.;** Meister Bros., agents for Paige, Allen and Pan-American cars, also Eureka tires, have removed to a new salesroom on Park street.

**Haubstadt, Ind.;** The Meny Bros. are now located in their new garage on Dixie Bee line.

**Lowell, Mass.;** Bibeault & Stevens, accessory dealers, have removed to new quarters.

**Worcester, Mass.;** The Packard Motor Car Co. has removed to the largest salesroom in the city.

**Saginaw, Mich.;** The Gillam Motor Co. has removed from Lapeer avenue to the corner of Genesee and James streets. The company has secured the agency for Gates half-sole tires, manufactured by the International Rubber Co.

**Minneapolis, Minn.;** The Allen Motor Co. has removed to new quarters at 747 East Superior street.

**Kansas City, Mo.;** Fowler-Martin Tire and Repair Co., 1607 Grand avenue, has moved to 1920 Grand avenue.

**Poplar Bluff, Mo.;** The Butler County Auto Co. has removed to Fifth street in the Ettinger building. The company has the agency for Ford cars.

**St. Louis, Mo.;** Grand Motor Car Co., 1617-19 S. Jefferson avenue, has moved to 3200 Halliday street.

**Omaha, Neb.;** The Master Sales Co. has removed to 414-418 South 12th street.

**Manchester, N. H.;** Connell & McKone. Overland distributor, has removed into new quarters.

**New York, N. Y.;** The Colt-Stratton Co. has removed to a new service building at Broadway and 64th street. The company handles both Dodge Brothers and Cole cars.

**New York, N. Y.;** Harry J. Everall, Inc., Roamer distributor, has moved to larger quarters at 236 West 59th street.

**New York, N. Y.;** W. R. Parkinson, 151 W. 29th street, has moved to 144 Taylor street, Brooklyn, N. Y.

**New York, N. Y.;** Westcott Motor Sales Corp. has removed to 1848 Broadway.

**Greenboro, N. C.;** T. I. Case Threshing Machine Co. has removed to Nashville, Tenn.

**Columbus, O.;** The Central Auto Vehicle Co., distributor for the Paige, has moved to larger salesrooms at 43 South Fourth street. A service station will be maintained in the rear of the building with John R. McLaughlin as manager.

**Dayton, O.;** Union Motor Sales Co., 409 Schwind building, has moved to 1182 Reibold building.

**Providence, R. I.;** Thomas Carbon Remover Co., has moved to 46 Broadway from 9 Benevolent street.

**Nashville, Tenn.;** The Hippodrome Motor Co. has removed to 1212 Broadway. W. A. Marks has been placed in charge.

**Spokane, Wash.;** Chester Paulson, Winton representative, has moved to W. 1421 Second avenue.

**Tacoma, Wash.;** The Auto Radiator and Fender Works have moved into their new building on St. Helens avenue.

**Milwaukee, Wis.;** Auto Device Mfg. Co., Manufacturers' Home building, has moved to 510 Broadway.

**Milwaukee, Wis.;** M. F. Sales Co., 701 Wells street, has moved to 426 Jefferson street.

**Milwaukee, Wis.;** Monarch Light Truck Co., 521 E. Water street, has moved to 923 Becher street.

**Milwaukee, Wis.;** Milwaukee Lubricants Co. has moved to 224 Broadway. The company was formerly located at 224 Broadway.

## Garages and Repair Shops Newly Chartered

**Jerseyville, Ill.;** Charles Blaser and Joseph Shortal have opened an automobile repair shop. They will handle supplies and accessories.

**Sandwich, Ill.;** Stockham Bros. are now established and ready for business in their new garage.

**Afton, Kan.;** Elmer Collins has opened a garage.

**Garland, Kan.;** E. E. Palmer has started construction work on his new garage.

**Wichita, Kan.;** J. M. Wilson has opened temporary salesrooms for the Geromino car at 1619 East Douglas street.

**Detroit, Mich.;** George W. Franklin Co. has opened a commodious garage at 969 Jefferson avenue. The company has the agency for Dort cars.

**Marquette, Mich.;** The Oakland Garage has opened on Champion street in place of the Ford Garage formerly at that location.

**Sault Ste. Marie, Mich.;** T. B. McClelland has opened a bicycle repair shop and automobile garage on Ashman street.

**Parker, S. D.;** R. E. Roantree has established a garage.

**Eau Claire, Wis.;** B. A. Flick has opened an automobile repair shop at 409 Water street. He will do all kinds of repair work.

**Mercer, Wis.;** The Bassett & White Automobile Co. has opened a garage business.

**Patch Grove, Wis.;** Anthony Pulda has opened a garage.

**Portage, Wis.;** The Loomis-Weinkie Motor Sales Co. is now established in its new garage on Wisconsin street. The garage occupies two floors, covering 15,000 feet of floor space.

**Waupace, Wis.;** Dayton Baldwin has leased the Yellowstone Garage from Charles Johnson.

**Greybull, Wyo.;** The Tanner & Daley Garage has opened and is now ready for business.

## Agencies, Dealers and Service Stations.

**Los Angeles, Cal.;** Standard Tire Co. has opened at 324 West Pico street with A. M. Friedman as manager.

**Sacramento, Cal.;** Graham & Lamus Co. has opened at 711 M street.

**San Francisco, Cal.;** The Lathan Auto Supply Co. is now established in its new building on Motor Row. The building is modern and is three stories high.

**Taft, Cal.;** The Taft Battery Works, 214 Centre street, will give service on Willard batteries.

**Hartford, Conn.;** The Connecticut Tire Co. has started the construction of a new three-story brick building.

**Wilmington, Del.;** The Electric Hose and Rubber Co. has completed the erection of a new machine shop.

**Chicago, Ill.;** The Acker Motor Sales Co. has opened a new sales and service station at 75th and Saginaw avenue.

**Chicago, Ill.;** Lozier Motor Car Co. has opened salesrooms at 2807 Michigan avenue.

**Chicago, Ill.;** The National Rubber Co. has opened a branch at 2112 Michigan avenue.

**Chicago, Ill.;** The Wayside Tire and Vulcanizing Shop has been equipped with the Prest-O-Lite service system for batteries.

**Henry, Ill.;** The Bogner Auto Co. has opened a service and sales station in the building south of the Henry Opera House.

**Rockford, Ill.;** The Harr Auto Co., Maxwell dealer, has opened new headquarters on West State street. A fine show room has been established in the front of the building.

**Attica, Ind.;** Bliss & Norton has opened a Willard service station on North Perry street.

**Dubuque, Ia.;** The Star Taxi Co. is now in possession of its new home at 750 Iowa street. In addition to operating taxi cabs the company has the agency for Stronghold tires and Prest-O-Lite batteries.

**Michigan City, Ind.;** The Michigan City Electric Co., 725 Franklin street, has opened a Willard battery station.

**Lowell, Mass.;** Donovan Harness Co. has secured the agency for Standard tires.

**Detroit, Mich.;** The American Electric Co., 908 Chene street, has opened a Prest-O-Lite battery service station.

**St. Charles, Mo.;** J. H. Machens has been appointed to give service on Prest-O-Lite batteries.

**Faribault, Minn.;** The Electric Specialty Co. has opened a Prest-O-Lite service station.

**St. Paul, Minn.;** A. C. Franke has opened for business at Fourth and Fifth streets and Smith avenue. He has the agency for Oldsmobile and Harroun cars.

**New York, N. Y.;** The Almo Garage Co. has leased for a term of 21 years the six-story service station now being erected at 227-229 East 56th street.

**New York, N. Y.;** J. P. Gorman, 47 West 42nd street, has taken the agency for Viking spark plugs.

**New York, N. Y.;** William McBride and L. H. Bachner have opened a used car salesroom at 1662 Broadway.

**Syracuse, N. Y.;** The Goodyear Tire and Rubber Co. has opened a new service station and salesrooms at 218 West Willow street. Manluis Orr, formerly of the Charlotte, N. C. branch of the company, has been placed in charge of this branch.

**Cincinnati, O.;** The Citizens' Motor Car Co., located at Seventh and Main streets, will open a branch in the business section.

**Columbus, O.;** Bidlack Tire and Specialty Co. has opened for business at 73 South Fourth street.

**Columbus, O.;** Hayes-Houston Tire Co. has been formed with headquarters at 207 East Town street. The firm handles the Victor and Springfield tires and tubes.

**Columbus, O.;** A. P. Richey & Co., Ford agents, have opened for business at 1288 North Height street. They are the successors to the firm of Wirtz & Richey.

**Dallas, Tex.;** The Rose Motor Co. has recently opened for business at Young and Browder streets. The company is a successor to the Ross-Fosdick Co., Hudson agent.

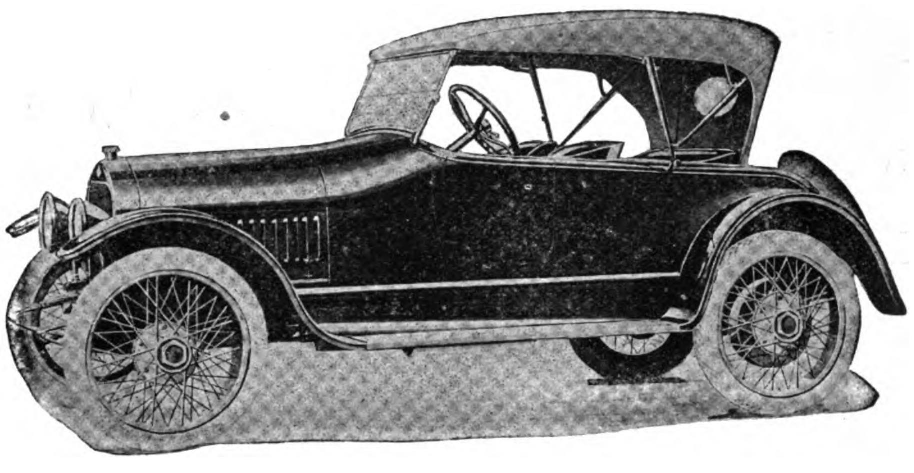
**Provo, Utah.;** Inter-Mountain Motor Car Co. has opened a branch here under the direction of W. H. White. J. M. Evans will have charge of the truck department.

**Eau Claire, Wis.;** Hans G. Bjornsrud has opened an automobile shop.

# *The Jackson Valve-In-Head Eight*

**The Wolverine Eight Is Made by the Jackson Automobile Co., Jackson, Mich. A Discussion of the American V Type Motor as Compared to the European Type Appeared in the Automobile Journal of May 10, 1917, Together with a Description of the Designs of the "Wolverine Eight" Series.**

**Alfred H. Sowers, Treasurer and General Manager Jackson Motor Car Co., Boston, Mass.**



**Four-Passenger Jackson Cruiser, with 118 -Inch Wheelbase, Including Five Wire Wheels, Priced at $1495.**

### FEATURES OF THE WOLVERINE.

**Engine, I head, V type, valve in head.**
**Make, Ferro.**
**Bore and stroke, 3x3½.**
**Horsepower, A. L. A. M., 28.8.**
**No. of cylinders, eight.**
**Carburetor, Zenith duplex.**
**Lubrication, variable force feed.**
**Fuel supply, Stewart vacuum feed.**
**Ignition, starting, lighting, Auto-Lite.**
**Battery, Willard.**
**Clutch, Borg & Beck disc.**
**Gearset, sliding gear, three forward and reverse.**
**Rear axle, full floating.**
**Wheelbase, 118 inches.**
**Springs, full elliptic, front and rear.**
**Tire sizes, 34x4.**
**Tread, 56 in.**

# RECORD OF NEW BUILDING PLANS IN JUNE

## Contracts Made and Plans Contemplated for Alterations or the Building of Garages, Repair Shops, Service Stations and New Plants.

**Benton, Ark.;** G. Hughes; one-story garage, 50x150; $10,000.

**Mulberry, Ark.;** William McCallum, L. D. Wasson and J. B. Randolphoe, Denning, Ark.; garage and repair shop, 30x75.

**Denver, Col.;** B. Bright; one-story garage, 100x105; $10,000.

**Denver, Col.;** Bert Williams, 1321 Logan street; two-story garage, 60x125; $40,000.

**Denver, Col.;** Silver State Laundry Co., 2426 Walnut street; one and two-story garage, 50x125; $11,000.

**Denver, Col.;** John Walters and F. X. Aicher; two-story garage, 50x125; $13,000.

**Bridgeport, Conn.;** Henry Grann, 206 Connecticut avenue; one-story public garage, 36x91; $10,000.

**Hartford, Conn.;** J. J. and R. A. McKone, 36 Pearl street; one-story garage, 200x20; $3000.

**New London, Conn.;** William H. Bush, 751 Bank street; public garage, 30x100; $3000.

**Stamford, Conn.;** Samuel Naylor, 219 South street; one-story auto service station: $9000.

**Waterbury, Conn.;** C. W. Perkins; one-story garage, 25x49.

**Waterbury, Conn.;** L. L. Archer, 33 Phoenix avenue; one-story public garage, 78x49; $10,000.

**Waterbury, Conn.;** J. F. White, 77 Easton avenue; one-story private garage, 28x18; $1100.

**Waterbury, Conn.;** Dr. George Russell, 236 Bank street; two-story garage, 60x68.

**Waterbury, Conn.;** Louis Levanthal; two-story garage, 45x50; $8000.

**Waterbury, Conn.;** Mrs. J. Murphy, 197 Willow street; one-story garage, 20x21.

**Wilmington, Del.;** R. W. Smith; two-story salesroom and repair shop, 18x76; $8000.

**Wilmington, Del.;** James M. Monaghan, 700 W. Fourth street; two-story garage, 60x80; $20,000.

**Wilmington, Del.;** R. C. Findall, 914 Orange street; one-story garage, 100x100.

**Wilmington, Del.;** Walter J. Thompson, 412 W. Twenty-fifth street; two-story garage, 55x42.6; $2500.

**Clearwater, Fla.;** F. J. Sheridan; one-story garage; 75 square feet; lessee, A. B. Crews.

**Casey, Ill.;** Johnson & Pierson; one-story garage, 39x126; $8000.

**Chicago, Ill.;** Kosher Star Sausage Manufacturing Co., 1012 Maxwell street; one-story garage, 25x33; $1500.

**Chicago, Ill.;** Curt Teich; two-story private garage, 30x30; $2000.

**Chicago, Ill.;** Albert Amos, 155 N. Clark street; one-story garage, 100x125; $28,000.

**Chicago, Ill.;** John W. Brunt, 9275 S. Chicago avenue; three-story garage and salesroom, 50x140; $40,000.

**Chicago, Ill.;** Meodore Peterson, 8 S. Dearborne street; one-story garage, 20x25; $3000.

**Chicago, Ill.;** O. S. Keith, 122 S. Michigan avenue; two-story garage, 27x22; $1000.

**Greenview, Ill.;** B. F. Marbold; one-story garage, 24x24; $2000.

**Red Bud, Ill.;** A. Baedeker; two-story garage, 43x87; $8000.

**Springfield, Ill.;** Overland-Broadhead Motors Co., 1022 S. Second street; one-story garage, 77x200; $15,000.

**Winamac, Ind.;** Dr. W. H. Thompson; one-story public garage, 52x55.

**Burt, Ia.;** Ray Grover; one-story garage, 50x100; $5000.

**Des Moines, Ia.;** Conrad Amend, 518 Locust street; one-story garage, 40x80; $5000.

**Emmetsburg, Ia ;** Mrs. Branagan; two-story garage, 48x112; $12,000.

**Keota, Ia.;** Guy E. Hoover; one-story garage, 100x100; $8000.

**Clinton, Ia.;** Standard Oil Co., Frank Hammer, manager, Seventeenth avenue and Sixth street; one-story garage and filling station, 127x136; $40,000.

**Sioux City, Ia.;** L. S. Toole, 414 United Bank building; one-story garage, 50x150; $7000.

**Sioux City, Ia.;** Andrew Johnson, 906 Morningside avenue; one-story garage, 50x50; $3000.

**Sioux City, Ia.;** W. L. Flinn, American block; one-story garage, 50x50 and L 47.5x150; $10,000.

**Sioux City, Ia.;** Iowa Bond and Mortgage Co., 415 Fourth street; one-story garage and salesroom, 100x150; $20,000.

**Halton, Kan.;** Frazie & Stolkoph; one-story garage, 50x150; $5000.

**Louisville, Ky.;** Consolidated Realty Co., brick garage; $7000.

**New Orleans, La.;** M. Zimmerman; one-story service station; $10,000.

**Laurel, Md.;** O. W. Phair; brick garage, 65x54; 1 Washington avenue; asbestos shingle roofing, cement floors, steam heat, electric lighting; $3500.

**Baltimore, Md.;** Tire Company of Baltimore, 135 W. Mount Royal avenue; service department building, adjoining present structure; $40,000.

**Frederick, Md.;** Mountain City Garage; two-story brick garage; 75 foot frontage; storage capacity 300 cars.

**Hamilton, Md.;** Dr. Theodore Cooke, 208 Law building; one-story garage, 50x140; $10,000.

**Arlington, Mass.;** Ernest Snow, 18 Tremont street, Boston; one-story private garage, 20x15.

**Boston, Mass.;** Mrs. Helen Hamblen, 121 Florence street; one-story private garage, 20x20.

**Boston, Mass.;** N. A. Palorisky, 8 Egremont road, Brighton district; 1½-story private garage and chauffeur's quarters, 30x60.

**Boston, Mass.;** Benjamin S. Connor, 450 Bennington street, East Boston; one-story public garage; $15,000.

**Boston, Mass.;** H. B. Barron, 198 Callender street, Dorchester district: one-story garage, 20x20.

**Boston, Mass.;** Meyer Dana, 20 Pemberton Square; one-story public garage, 130x23.

**Boston, Mass.;** George N. Douse, 8 Whitten street; two-story public garage, 95x110.

**Boston, Mass.;** S. W. Dunn & Co., 28 Bromfield street; two-story public garage, 60x120.

**Chicopee, Mass.;** Jacob Sitnik, 49 Perkins street; one-story garage, 53x110; $9000.

**Hudson, Mass.;** Harvey Broadbent, 82 Lincoln street; one-story public garage, 60x80; $7000.

**Lawrence, Mass.;** Robinson Hardware Co., 261 Essex street; two-story public garage, 100x93; $60,000.

**Malden, Mass.;** Joseph Patti, 173 Adams street; one-story garage, 18x20.

**Marshfield, Mass.;** John Ford; one-story public garage, 40x75; $4000.

**New Bedford, Mass.;** William J. Munsey, 923 Purchase street; two-story garage, 89x86; $15,000.

**New Bedford, Mass.;** Lawrence Grinnell, S. Dartmouth, Mass.; one-story public garage, 84x96; $12,000.

**New Bedford, Mass.;** George N. Alden, Jr., 163 Middle street; garage and service station; $8000.

**New Bedford, Mass.;** Edward H. Gregory, 898 S. Water street; one-story public garage, 100x120; $25,000.

**New Bedford, Mass.;** E. C. Earley, 21 James street; one-story garage, 40x50; $5000.

**New Bedford, Mass.;** Clarence H. Brownell, Chapman building; one-story public garage, 96x84; $10,000.

**North Adams, Mass.;** North Adams Gas Light Co., 77 Franklin street, Boston; one-story garage, 24x60.

**Somerville, Mass.;** Frank C. Mello, 38 Bond street; one-story public garage, 50x38.

**Somerville, Mass.;** Mary E. Flagg, 137 Medford street; one-story public garage, 50x75; $2500.

**Somerville, Mass.;** Peter F. McSorley, 1431 Cambridge street, Cambridge, Mass.; one-story garage, 49x100; $6000.

**Winchester, Mass.;** C. W. Young; one-story private garage, 22x24.

**Winchester, Mass.;** Thomas Quigley, Jr., 18 Lake street; one-story private garage, 30x34.

**Detroit, Mich.;** Bamlet Kent, Federal building; one-story private garage, 21x23.

**Detroit, Mich.;** Pollman & Ropes, 602 Sun building; 1½-story garage and chauffeur's quarters, 23x23; $2500.

**Detroit, Mich.;** Holmes-Stowe Lumber Co.; one-story public garage, 67.6x100.

**Detroit, Mich.;** Frank E. Hill, 711 Empire building; one-story garage, 50x96.

**Detroit, Mich.;** Armstrong, Jewell Co., 318 Penobscot building; one-story garage, 50x112; $6000.

**Detroit, Mich.;** S. J. Hardenbergh, 203 Avery avenue; one-story garage, 20x30.

**Ecorse, Mich.;** Harry F. Farwell, 711 Empire building; one-story garage, 18x20.

**Grand Rapids, Mich.;** Osgood & Osgood, Herald building; two-story public garage, 134x50; $35,000.

**St. Clair Heights, Mich.;** Jacob Levin, 201 Theodore street; one-story garage, 120x63; $7000.

**Hopkins, Minn.;** P. C. Schoelkopf; one-story public garage and machine shop, 50x140; $12,000.

**Randall, Minn.;** Herman Ritter; one-story garage, 50x80.

**St. Paul, Minn.;** P. S. Wick, 930 Portland avenue; two-story private garage, 24x30.

**St. Paul, Minn.;** Realty Service Co.; 713 Pioneer building; one and two-story public garage, 100x132; $30,000.

**Joplin, Mo.;** Henry Weymann, 508 Sargent street; 1½-story garage, 25x35; $3500.

**Kansas City, Mo.;** A. H. Munger; one-story brick garage; $6500.

**Kansas City, Mo.;** J. T. Bird; two-story fireproof salesroom and service station, 59x35; lessee, J. F. O'Mally.

**St. Louis, Mo.;** Felix Scalzo, 3515 Morgan street; one-story public garage, 51x150; $10,000.

**St. Louis, Mo.;** Charles Ullman, 106 N. Seventh street; one-story private garage, 87x55; $10,000.

**St. Louis, Mo.;** Weick & Son, 412 Dochouquette street; one-story private garage, 48x95; $5000.

**St. Louis, Mo.;** Bush Burns Realty Co., 1105 Chestnut street; one-story garage, 57x20; $2000.

**St. Louis, Mo.;** Riefling & Viger Auto Co., 1617 S. Jefferson avenue; one-story auto service station, 104x114; $15,000.

**St. Louis, Mo.;** H. Leschen & Sons, 820 N. Main street; one-story garage, 30x80; $10,000.

**Lewistown, Mont.;** Montana Lumber Co.; two-story garage, 26x80; $8000.

**Omaha, Neb.;** M. D. Cameron; two-story garage, 50x132; $15,000.

**Schuyler, Neb.;** Doughty Motor Co.; one-story garage; 50x140 and wing 66x70; $8000.

**Surprise, Neb.;** Way & Fish; one-story garage, 50x80.

**Manchester, N. H.;** C. J. Giroux; two-story public garage, 50x120; $15,000.

**Asbury Park, N. J.;** James Kelsey, Plaza Hotel; two-story private garage, 25x55; $3000.

**Asbury Park, N J.;** Harry L. Giberson, 512 Second avenue; one-story public garage, 116x48.

**East Orange, N. J.;** Alexander Kaplen, 372 Park avenue, Weehawken, N. J.; one-story garage; $7000.

**Elizabeth, N. J.;** Joseph Ribinski, 131 First street; one-story garage, 37x50; $2500.

**Jersey City, N. J.;** Daniel Walstein, 645 Bergen avenue; one-story private garage, 21x46; $400.

**Newark, N. J.;** Frank Gerace, 19 Hunterdon street; one-story public garage, 30x40; $3000.

**Newark, N. J.;** John Kopyta, 386 S. Orange avenue; one-story public garage, 25x101; $5000.

**Newark, N. J.;** Frank Preston, 53 East Kinney street; one-story public garage, 68x72; $10,000.

**Paterson, N. J.;** Abraham Smith, 51 Fair street; two-story garage and storage station, 37x110.

**Paterson, N. J.;** M. Parmelli, 583 River street; one-story public garage, 50x100; $8000.

**Paterson, N. J.;** H. Grebenzik & Son, North Paterson; two-story garage, 42x35, and one story, 14x14.

**Passaic, N. J.;** Meyer Baker, 26 Ann street; one-story public garage, 95x118; $20,000.

**Brooklyn, N. Y.;** Martin Garage, 4815 Third avenue; three-story garage, 50x100; $35,000.

**Brooklyn, N. Y.;** Packslip Auto and Trucking Co., 585 Howard avenue; one-story garage, 38x95; $6000.

**Brooklyn, N. Y.;** Harris Building Co., 190 Montague street; one-story garage, 47x200.

**Brooklyn, N. Y.;** Jennie Ferro, 601 Degraw avenue; one-story garage, 51x98; $7000.

**Brooklyn, N. Y.;** John Skloi, 133 Floyd street; one-story garage, 100x126; $20,000.

**Brooklyn, N. Y.;** Gaugh & Church, 1344 Jefferson avenue, Ridgewood; one-story garage, 20x100; $5000.

**Brooklyn, N. Y.;** Paul Klein & Bros., 901 Fifty-fifth street; one-story public garage, 50x100; $10,000.

**Brooklyn, N. Y.;** Estate Charles E. Miller; two-story garage and storage station, 51x60; $6500.

**Brooklyn, N. Y.;** William T. McCarthy, 16 Court street; one-story garage, 50x122; $15,000.

**Brooklyn, N. Y.;** Isaac Kleinfeld, 208 Utica avenue; one-story garage, 100x100; $15,000.

**Brooklyn, N. Y.;** J. A. Boyle, 371 Fulton street; one-story garage, 50x100; $12,000.

**Canandaigua, N. Y.;** Tuttle Estate; one-story private garage, 40x75; $7000.

**Forest Hills, L. I., N. Y.;** Continental Avenue Garage, Inc.; one-story garage, 98x131.

**Brooklyn, N. Y.;** Shampan & Shampan, 772 Broadway; one-story garage, 100x100; $7000.

**Brooklyn, N. Y.;** Theodore C. Bittner, 17 Elton street; one-story garage, 74x108; $9000.

**Brooklyn, N. Y.;** Adolph Wexler, 637 Metropolitan avenue; one-story garage, 40x100; $7500.

**Brooklyn, N. Y.;** H. A. Crosby, 2773 E. Twenty-seventh street; one-story garage, 50x97; $7000.

**Brooklyn, N. Y.;** Cortelyou Building Co., 241 Twenty-sixth street; one-story garage, 46x90; $7000.

**Brooklyn, N. Y.;** Knorn Bros., Decatur and Irving avenues; 10 one-story private garages, 20x132x142; $5000.

**Brooklyn, N. Y.;** Otto Ehenzwerg, 361 Matford avenue; one-story garage, 50x100; $10,000.

**Buffalo, N. Y.;** G. Frederick Calmbach, 1820 Niagara street; one-story public garage, 92x104; $4000.

**Jamestown, N. Y.;** R. W. Scholep; six one-story garages, 22x60.

**Long Island City, L. I., N. Y.;** G. Gesualdi, 158 Vernon avenue; one-story garage, 50x60; $6000.

**Monroe, N. Y.;** O. W. Carr; two-story garage and chauffeur's quarters, 26x42; $7000.

**New York, N. Y.;** John E. Collins; one-story garage, 100x100; $20,000.

**Schenectady, N. Y.;** A. M. Liecty, 3 Douglas road; one-story garage, 18x25; $2000.

**New York, N. Y.;** Willow Astoria Corp., Thomas D. Malcolm, president, 91 Willow street; one-story garage, 72x107; $15,000.

**New York, N. Y.;** David Kadinsky, president K. & L. Realty Co., 35 Nassau street; one-story garage, 75x200; $15,000.

**New York, N. Y.;** Inwood Garage Co., 2437 Morris avenue; one-story garage, 100x120; $20,000.

**New York, N. Y.;** William Hagedern, First avenue and 98th street; one-story garage; $14,000.

**New York, N. Y.;** Frank Desider, 443 West 54th street; one-story garage, 50x100; $10,000.

**New York, N. Y.;** Michael F. Loughman, 47 West 34th street; five-story garage, 100x102; $15,000.

**New York, N. Y.;** Henry Hob, 567 Third avenue; one-story garage, 25x98; $5000

**New York, N. Y.;** Elva F. Pawley, 1935 Daly avenue; one-story garage, 150x106; $35,000; lessee, Merrill Realty Co., 35 Nassau street.

**New York, N. Y.;** Oval Garage Corp., Jacob Sanders, 950 St. John Avenue; three-story garage, 150x100; $75,000.

**Norwich, N. Y.;** E. D. Lyon; one-story public garage, 50x25; $4000.

**Port Chester, N. Y.;** John Copantino, Palmer Place; one-story garage, 43x98; $9000.

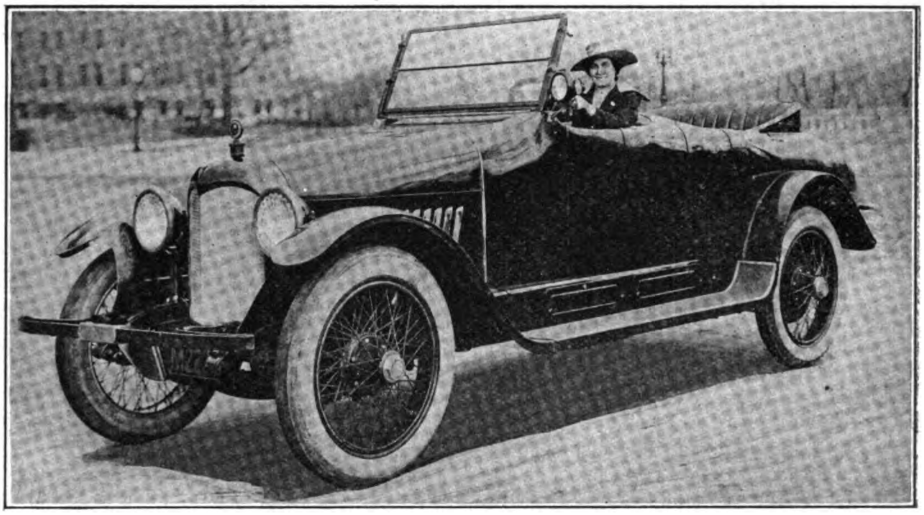
**Richmond Hill, L. I., N. Y.;** Charles Colin; one-story garage, 40x93; $4500.

**Syracuse, N. Y.;** August Birchler, 528 Butternut street; one-story community garage, 48x66; $3000.

**Woodside, L. I., N. Y.;** Charles Wille, Flushing, L. I., N. Y.; one-story garage, 55x110; $7000.

**Schenectady, N. Y.;** George E. Dougall 527 State street; one-story garage, 32x99; $4500.

# *New Pathfinder Touring Roadster*



**Miss Nellie D. Prendergast, Publicity Dep artment the Pathfinder Company, Indianapolis, Ind., Driving 12-Cylinder Car.**

**Sheepshead Bay, L. I., N. Y.;** Harry Wickel; one-story garage, 50x90; $5000.

**Yonkers, N. Y.;** David S. Engle, 40 Hawthorne avenue; one-story garage, 26x50; $5000.

**Wadesboro, N. C.;** Blalock-Allen Auto Co.; two-story brick garage, 66x175; plate glass front.

**Cleveland, O.;** William Markowitz, United Bank building; one-story commercial garage, 40x70.

**Oklahoma City, Okla.;** Campbell & Price; two-story brick and concrete garage; $30,000.

**Tulsa, Okla.;** Patrick Hurley and A. C. Johnson; one-story brick garage with stone trimmings; 100x140; $14,000.

**Bradford, Penn.;** Tidewater Pipe Co.; three-story garage, 50x80; $35,000.

**Chester, Penn.;** Penn Realty Corp. of Chester; three-story public garage, 60x150; $50,000.

**Dubois, Penn.;** D. R. Wasbinder, 111 E. Washington avenue; one-story storage garage, 48x65; $2000.

**Easton, Penn.;** John Neumeyer, Northampton National Bank; one-story garage, 60x150; $10,000.

**Lancaster, Penn.;** Frederick Wiker; one-story garage, 22x24; $3000.

**Monessen, Penn.;** Mrs. Elizabeth Kiefer; two-story commercial garage, 44x100; $12,000.

**Perkasie, Penn.;** William Kramer; one-story garage, 50x100; $5000.

**Philadelphia, Penn.;** American Metal Works, A. N. North, secretary and treasurer, 314 Armat street; two-story garage, 40x60; $5000.

**Philadelphia, Penn.;** Heyman & Co., 1420 S. Penn Square; three-story auto display room and garage, 30x160; $18,000.

**Philadelphia, Penn.;** W. H. Whiteman, 111 Walnut street; one-story garage, 18x22.

**Philadelphia, Penn.;** Rowland Supply Co., Inc.; 1917 N. Park avenue; two-story public garage, 40x115; at northwest corner, northeast boulevard and Broad street; $20,000.

**Sanderton, Penn.;** J. M. Landes; one-story garage, 24x26; $1800.

**Villanova, Penn.;** Dr. Wilber Klapp, 1½-story garage, 25x50; $2000.

**Yekes, Penn.;** I. C. McLandes, public garage; $5000.

**Bethlehem, Penn.;** C. A. Buck, care Bethlehem Steel Co.; two-story garage and chauffeur's quarters, 32x43.

**Philadelphia, Penn.;** Jonathan R. Jones, 1325 Chestnut street; one-story garage, 21x22; $1500.

**Philadelphia, Penn.;** William Berry, 40 N. 41st street; one-story garage, 35x90.

**Philadelphia, Penn ;** F. G. Vogt & Sons, 30th and Race streets; one-story garage, 80x170; $20,000.

**El Paso, Tex.;** Mrs. E. M. Bell; eight garages; $12,000.

**Columbus, O.;** Jerry Bliss and Dr. B. E. Lindsey, 106 Lexington avenue; one-story garage, 70x186; $12,000.

**Marysville, O.;** Overland Motor Car Co.; J. H. Huffman, manager; one-story garage, 134x42.

**Oxford, O ;** A. P. Stork; one-story garage, 50x132.

**Toledo, O.;** C. W. Beelman, 812 Second National Bank; one-story garage, 60x120; $8000.

**Youngstown, O.;** Saymore & Gutman; three-story commercial garage, 95x100.

**Chandler, Okla.;** C. Crane and L. Anderson; one-story brick fireproof garage; $7000.

**Guthrie, Okla.;** J. D. Vanhoozer; two-story brick garage, 70x140; $12,000.

**Akron, O.;** Ackerman, 828 Coburn street; one-story public garage, 62x200; $15,000.

**Cincinnati, O.;** R. K. LeBlond, 4709 Eastern avenue; one-story garage, 330x20.

**Cincinnati, O.;** Charles Larentz, 2355 Fairview Heights; one-story private garage, 22x20; $1200.

**Cincinnati, O.;** Charles Mayer, 1826 Madison road; one-story private garage; $1000.

**Cincinnati, O.;** Mrs. Edna F Lee, 2929 Wold avenue; one-story private garage, 25x30.

**Newport, R. I.;** Dr. Christopher Horseman; one-story public garage, 26x100; $4000.

**Wessington Springs, S. D.;** Wessington Springs Hardware and Implement Co.; two-story public garage, 44x132.

**Richmond, Va.;** Richmond Motor Co., 911 E. Broad street; two-story garage, 67x127; $40,000.

**Pleasant Valley, W. Va.;** R. M. Gilleant, Bellaire, O.; two-story garage, 30x30; $3500.

**Ritzville, Wash.;** Big Bend Motor Co.; one-story garage, 100x130; $12,000.

**Almond, Wis.;** S. E. Sanders; one-story garage, 60x120; $10,000.

**Dousman, Wis.;** E. F. Miller; one-story garage; $8000.

**Eau Claire, Wis.;** J. A. Smith; one-story private garage, 26x26; $2500.

**Elkhorn, Wis.;** White, White & White, Kenosha, Wis.; two-story garage, 125x125; $65,000.

**Green Bay, Wis.;** William Conway; one-story garage, 20x36; $4000.

**Kenosha, Wis.;** S. Rinilli; one-story garage, 50x100; $7500.

**Madison, Wis.;** Brewer & Moses Auto Co., 107 E. Doty street; one-story garage, 112x66.

**Milwaukee, Wis.;** Edward H. Muller, 559 40th street; one-story garage, 20x75 and L 35x20; $2700.

**Milwaukee, Wis.;** Standard Oil Co., 614 Germania building; two-story garage, 90x140.

**Milwaukee, Wis.;** J. Stoll, 413 24th street; one-story private garage, 21x30.

## New Contracts Recently Awarded.

**Benton, Ark.;** J. K. Kelly; one-story brick garage, 40x100; for J. W. Atkinson.

**Fort Smith, Ark.;** Ira D. Oglesby, Sr., one-story fireproof garage, 75x140; plate glass front; $25,000. Lessee, Paul W. Sheridan's Ford Automobile Agency.

**New Haven, Conn.;** J. A. Hagan, 83 Whally avenue; one-story garage, 40x40x106; for Farrar & Hagan; $5000.

**New London, Conn.;** Lubschansky Bros., 217 Main street; one-story public garage, 50x100; for Louis Schwartz & Bankstieir; $10,000.

**Waterbury, Conn.;** John Emonz, 45 Wheeler street; one-story public garage, 20x40; for Charles Ameder, 160 Charles street.

**Waterbury, Conn.;** J. W. Gabfney & Son, 427 E. Main street; two-story garage and storage station, 34x50; for Louis Leventhal, 75 Wall street; $10,000.

**New Britain, Conn ;** B. H. Hibbard Co., 140 Main street; one-story garage, 24x28; for George Spear.

**Waterbury, Conn.;** Tracy Brothers Co., 52 Benedict street; one-story private garage, 12x18; for H. A. Pendelbury; $1100.

**Tampa, Fla.;** Logan Bros.; two-story brick garage and display room; for John D. Cox, Jonesboro, Tenn.; $12,000. Lessee, Hixon Motor Sales Co.

**Atlanta, Ga.;** M. Flagler Co.; one-story brick and stone garage for Mrs. Kate Cox; $17,500.

**Atlanta, Ga.;** Fulton County Home Builders; three-story garage, 101x150; terra cotta front with plate glass windows; sprinkler system; $75,000. Lessee, Southern Oakland Co.

**Wilmington, Del.;** Sobcinske & Tomerzak, 618 S. Van Buren street; three-story garage, 48x98, for Eleventh War Automobile Co., 600 S. Harrison street; $5295.

**Washington, D. C.;** Leo J. Long, 4307 New Hampshire avenue, N. W., six brick garages, at 1421 T street, N. W., for George A. Prevost, 703 Barrister building; $3000.

**Atlanta, Ga.;** Pittman Construction Co.; one-story brick automobile factory for Hanson Motor Car Co., 122 Auburn avenue; $35,000.

**Cicero, Ill.;** Joseph Cermak, 4431 W. 23rd street, Chicago; one-story garage, 50x125; for Anton Hallal, 2536 S. Hardines avenue; $8000.

**Chicago, Ill.;** P. C. Stadler, 4449 N. Kimball avenue; one-story garage, 50x127, for E. F. Toomey, 112 Keystone avenue; $8000.

**Chicago, Ill.;** Gundlach Construction Co., 74 W. Washington street; one-story garage and salesroom, 25x15, for Sinclair Refining Co.; $2000.

**Chicago, Ill.;** Jacob Rodatz, 209 S. La Salle street; two-story garage, for Western Packing and Provision Co., 3854 S. Morgan street; $5000.

**Chicago, Ill.;** P. Kowazek, 30 George street; one-story garage, 60x11; $9000.

**Chicago, Ill.;** Universal Auto Sales Co., 5001-3 S. Western Boulevard; one-story public garage, 60x100; $9000.

**West Frankfort, Ill.;** E. E. Gill, Marion, Ill.; one-story garage, 36x100; for William Phair; $3600.

**Council Bluffs, Ia.;** E. A. Wickham, 19 Scott street; two-story garage, 76x156; for C. Hafer, 135 Broadway; $20,000.

**Pringhar, Ia.;** Frank Meridan; one-story garage, 52x100; for Albert Gains; $3000.

**Chicago, Ill.;** F. Scherech, 2110 S. Spaulding avenue; one-story private garage, 25x40; $1500.

**Chicago, Ill.;** Shank Co., 30 N. La Salle street; one-story private garage, 25x30, for T. Bushear, 3121 Douglas boulevard; $2000.

**Chicago, Ill ;** Scown Building Co., 36 W.

Randolph street; one-story garage, 80x196, for United States Brewing Co.; $20,000.

**Chicago, Ill.;** H. B. Barnard, 140 S. Dearborn street; one-story garage, 50x150, for Union Petroleum Co., 4345 S. Western boulevard; $18,000.

**Chicago, Ill.;** Oliver Anderson, 4654 Monticello avenue; one-story garage, 50x100; $8500.

**Hampton, Ia.;** George Seigent; two-story garage, 66x124, for H. E. Ford; $15,000.

**Louisville, Ky.;** Litchfield, Metzner & Co., 918 Logan street; two-story private garage for Jacob Leumann, 45 Hill road, Castelwood; $2500.

**Perryville, Ky.;** J. H. Westerfield; brick garage, 50x100; asbestos roofing, concrete floors, steam heat, electric lighting; for Perryville Motor Co.; $5000.

**Bangor, Me.;** Bangor Cast Stone Products Co., First National Bank Bldg., two-story public garage and storage station, 96x120; for William Blake,. 60 Market street.

**Hagerstown, Md.;** W. L. Middlehauff, 655 W. Washington street; two-story garage, 20x24; for Charles H. Earley, 18 W. Washington street; $2500.

**Boston, Mass.;** Murdock MacKenzie, 346 Belgrade avenue, Roslindale district; one-story private garage, 23x23; for Edward L. Prescott, 25 Park street, West Roxbury district.

**Brockton, Mass.;** H. F. Johnson, 10 Lawrence street; one-story private garage, 48x86, for Z. Kaplan, 63 Bay street; $5000.

**Chicopee, Mass.;** Cota Bros., Aldenville, Mass.; one-story public garage, 47x102, for Baldwin & Lemay; $5000.

**Everett, Mass.;** Clark & Lee Co., 201 Devonshire street. Boston; one-story public garage, 162x47, for S. J. Lea, 37 Walcott street; $25,000.

**Gloucester, Mass.;** J. P. Fears, Rockport, Mass.; one-story public garage, 20x36, for L. Hawkins.

**Haverhill, Mass.;** J. J. Hanson; two-story public garage, 50x140, for J. O. Ellison, care Ellison Motor Co., 15 Middlesex street; $15,000.

**Hull, Mass.;** Bradford Weston, Alberton, Mass.; one-story public garage, 58x120, for N. W. Wannzen; $5000.

**Lowell, Mass.;** Creamer Bros., 109 Merrill avenue; one-story public garage, 142x118, for James W. McKenna, 419 Bridge street; $25,000.

**Lowell, Mass.;** John B. Moran and Gedion and Louis Rochette; two-story public garage, 90x81; $5000.

**Holyoke, Mass.;** Casper Ranger Construction Co., Bond and Appleton streets; one-story garage, 73x22, for American Writing Paper Co.

**New Bedford, Mass.;** F. B. Sistare, 111 Willis street; one-story garage, 20x26, for John Lonholdt, 220 Shawmut avenue; $1500.

**Newton, Mass.;** William C. Brewer, 145 Gibbs street; one-story private garage, 24x24.

**Northampton, Mass.;** Frank S. Parsons, 15 Maple street; one-story auto storage and warehouse, 90x200; $15,000.

**Springfield, Mass.;** J. H. Parent, 8 Betts avenue; one-story garage, 28x41; for city of Springfield; $3000.

**Springfield, Mass.;** E. W. Shattuck, 12 Cass street; one-story garage; for Dr. Luke Corcoran, 95 Maple street; $3000.

**Springfield, Mass.;** E. L. Sampson & Bros. Co., 38 Dawes street; one-story garage, 158x60; for Bowdoin Co., 293 Bridge street.

**Springfield, Mass.;** Lyman Howes, 387 Main street; one-story public garage, 60x158; for William H. Carpenter Co., 293 Bridge street; $25,000.

**Worcester, Mass.;** J. B. Kelley, 64 Hone avenue; one-story garage and shop, 25x35 and wing 12x18; for E. W. Parks, 346 Franklin street.

**Worcester, Mass.;** L. Rocheford & Son, 44 Front street; two-story public garage, 60x114; for J. Francis Southgate, 5 Crown street; $30,000.

**Yarmouthport, Mass.;** F. D. Sears, South Yarmouth, Mass.; one-story public garage, 20x30; for T. C. Thatcher; $1500.

**Almont, Mich.;** Frank Bishop; one-story public garage, 50x83; $3500.

**Albert Lee, Minn.;** C. M. Tapager, 323 Howe Investment building; two-story public garage, 66x120; for G. A. Olson, Ford agent; $30,000.

**Clearbrook, Minn.;** Clearbrook Cement Products Co.; one-story public garage and display room, 50x80; for Landeen Bros.

**Dodge Center, Minn.;** J. B. Nelson Co., 503 Belgrade avenue, Mankato, Minn.; one-story public garage, 66x100; for Dodge Center Improvement Co.; $7000.

**Madelia, Minn.;** J. B. Nelson Construction Co., 503 Belgrade avenue, N.; one-story public garage, 66x100; for Forstner Bros.

**Minneapolis, Minn.;** Madsen & Peterson, 802 Plymouth building; one-story public garage, 60x100; for Arthur M. Smith, 249 Hennepin avenue; $6000.

**St. Paul, Minn.;** W. H. Forbes, Crocus Hill; two-story private garage, 26x32; $800.

**Kansas City, Mo.;** A. H. Munger, 712 E. 47th street; one-story public garage, 96x142; $6500.

**Omaha, Neb.;** John Kyhle, 600 Barker block; one-story garage, 44x26; for Charles E. Metz, 52nd avenue and Davenport street; $5000.

**Atlantic City, N. J.;** Ogden & Bernicker, 21 S. Columbia avenue; one-story garage, 50x157; for M. Lerchner, 2415 Pacific avenue; $3000.

**Jersey City, N. J.;** J. H. Bullock, 7 Foye place; one-story public garage, 50x100; $6500.

**Montclair, N. J.;** John S. and L. Carlson; one-story private garage, 28x26; for I. W. Lewis; $4500.

**Buffalo, N. Y.;** Warner & Warner, 605 Erie County Bank building; one-story garage, 20x20; for Mrs. Harriet M. Devercaux, 280 Richmond avenue.

**Brooklyn, N. Y.;** Justis D. Doeneke & Son; one-story garage; for William Beucken, 1473 Bedford avenue; $2500.

**Long Island City, L. I., N. Y.;** J. Odell Whitenack, 231 W. 18th street, New York; one-story garage and service station, 77x133; for Frederick Ayer, 1004 Oliver building; $20,000.

**Rochester, N. Y.;** T. N. Symington Co.; one-story garage, 20x80.

**Rochester, N. Y.;** H. J. Utz, 517 University avenue; one-story garage, 37x25; $2000.

**Cleveland, O.;** W. F. Hyde, 1008 Scoville avenue; one-story private garage, 37x25; for L. A. Murphy, 1884 E. 89th street; $1500.

**Cleveland Heights, O.;** C. R. Moody; one-story private garage, 22x46; for Mrs. C. E. Grove, 3053 Fairmount Boulevard; $3500.

**Cleveland, O.;** Uhe & Jaster Co., 1900 Euclid building; one-story garage, 50x46; for W. W. Young, 8311 Prospect avenue.

**Cleveland, O.;** Boldt-Law Construction Co., 1108 Swetland building; two-story garage, 40x130; for Cleveland Auto School, 2340 Euclid avenue; $12,000.

**Cleveland, O.;** H. Klefman, 4319 Woodbridge avenue; one-story garage, 81x21; for Barkwell, Farr Co., 222 Leader-News building; $3000.

**McComb, O.;** B. B. Dean, 285 Congress street, Detroit, Mich.; one-story public garage, 50x150.

**Allentown, Penn.;** Robert H. Snyder, 391½ Cedar street; one-story garage, 20x30; for Aaron Ownsky; $1500.

**Allentown, Penn.;** Tilgh H. Moyer, 824 Hamilton street; one-story garage, 34x25; for Charles Moyer, 1402 Hamilton street; $1800.

**Allentown, Penn.;** Amanders Albright & Sons, 1698 Chew street; one-story garage, 20x24; for Frank Everhard, 1330 Hamilton street; $1000.

**Lancaster, Penn.;** S. D. Warfel, 958 E. Orange street; two-story garage; for D. L. Harnish; $7000.

**Ardmore, Penn.;** Frank H. Mahan, 25 W. Lancaster avenue; one-story garage, 53x63; for Counties Gas and Electric Co., Samuel T. Bodine, president, northwest corner Broad and Arch street, Philadelphia; $8000.

**Philadelphia, Penn.;** C. C. Carn; one-story brick garage, 18x118; 4644 Hedge street; for Charles E. Reese; $2000.

**Philadelphia, Penn.;** Alfonso Verdi; one-story brick garage, 23.6x31.6; at 2144 North 62nd street; for Joseph McGlory; $1000.

**Philadelphia, Penn.;** George Ruhland Construction Company; one-story stone garage, 175x18; also one same, 60x78.2; south side Tulpehocken street, east of Baynton street; for Aero Garage Co.; $4200.

**Philadelphia, Penn.;** E. H. Apsley; four brick garages, each 9x16; north side Thomas avenue, east of Fifty-fourth street; $800.

**Philadelphia, Penn.;** Conneen Construction Co.; one-story brick garage, 24x26; southeast corner Hancock and Westmoreland streets; for Thomas E. Brown & Sons; $1800.

**Philadelphia, Penn.;** Harry Drake; one-story brick garage, 16x20; at 7248 Rising Sun lane; for Joseph Schmidt; $800.

**Philadelphia, Penn.;** Edward T. Bender, 6014 Torresdale avenue; one-story garage, 47x75; for John Bauber, Bustleton, Penn.; $5600.

**Philadelphia, Penn.;** William Hill, 2525 Hagert street; one-story garage, 160x601; for Charles Y. Scully, 5254 Germantown avenue; $3500.

**Philadelphia, Penn.;** Joseph S. Silver; one-story brick garage, 16x20; at 1034 Atlantic street; $500.

**Philadelphia, Penn.;** Davis & Clayton; two-story stone and brick garage, 20x26.6; west side 48th street, south of Chester avenue; for J. J. Turney; $3125.

**Philadelphia, Penn.;** M. A. Green; frame garage, 16x18; South side Passmore street, east of Argyle street; for Mrs. Agnes C. Wharton; $550.

**Philadelphia, Penn.;** I. A. Dunkelberger; one-story stone garage, 19x23; at 736 Lincoln drive; for Mrs. H. B. Plummer; $1200.

**Philadelphia, Penn.;** C. E. Lloyd, Jr., stone and frame garage, 16x18, West side Fairhill street, south of Chelten avenue; $1000.

**Philadelphia, Penn.;** Wolverton & Collins; stone garage, 22x22; south side Abington avenue, east of Navajoe street; for Dr. George Woodward; $1200.

**Philadelphia, Penn.;** E. J. Kreitzburg; brick garage, 15x22; at 1909 North Broad street; for A. H. Mershon; $795.

**Philadelphia, Penn.;** John E. Walt; stone garage, 17x27; rear 106 West Upsal street; for Robert J. Montgomery; $2000.

**Philadelphia, Penn.;** John Fotheringham; brick garage, 18x30; north side Foulkrod street, east of Horrocks street; for J. Spratt; $1100.

**Philadelphia, Penn.;** C. E. Lloyd, Jr.; one-story frame garage, 12x18; at 705 Chelten avenue; for Robert H. Dippy; $500.

**Philadelphia, Penn.;** Charles Schoppe; one-story brick garage, 80x94; southeast corner Palmer and Blair streets; for Mrs. Dorothea Will; $3850.

**Philadelphia, Penn.;** William H. Howe; one-story stone automobile store building, 14x21; at 2410 Gulf road; for Edward Smith, Jr.; $900.

**Philadelphia, Penn.;** Seeds & Derham; 1½-story brick garage, 18x26; at 371 Gowan avenue; for John Derham, Jr.; $1500.

**Philadelphia, Penn.;** Samuel Morrison; one-story stone and brick garage, 69x20; northeast corner A and Tioga streets; for B. Hosking; $1200.

**Philadelphia, Penn.;** James N. Mitchell; 1½-story hollow tile garage, 25x20.6; southeast corner Lincoln avenue and Springer street; for Sylvester Heiter; $1500.

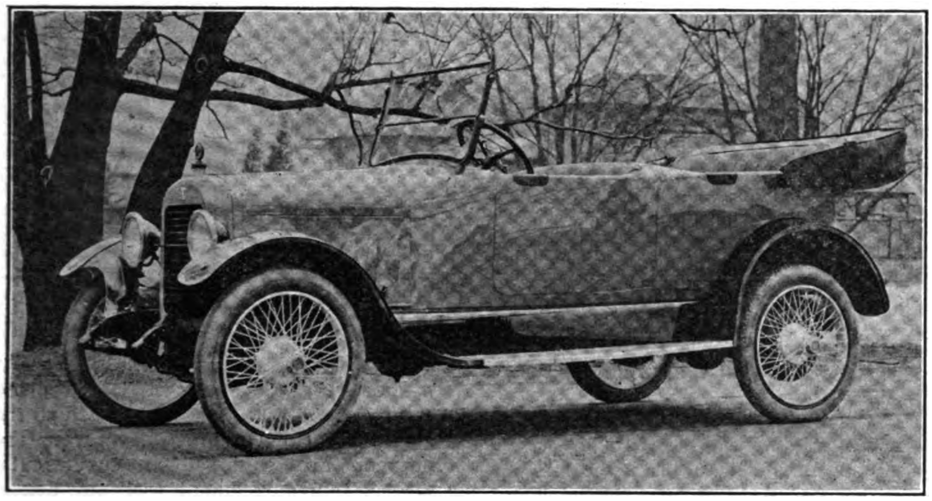
**Philadelphia, Penn.;** C. E. Lloyd, Jr., frame garage, 16x18; east side Fairhill street, south of Chetten avenue; $600.

**Philadelphia, Penn.;** F. A. Havens Co.; two-story stone garage, 20x23; south side city line, west of Church road; for Joseph Gilfillan; $2500.

**Philadelphia, Penn.;** Owen Fogarty; two-story stone garage, 23x28; at 8315 Seminole avenue; for J. Leeds Barrell; $3800.

**Philadelphia, Penn.;** Mutual Engineering Co.; two-story brick garage and machine shop, 36x192; at 2023-25 North 29th street; for John H. Weber; $12,000.

# The Columbia Six Touring Car



**Made by Columbia Motors Co., Detroit, Mich.; Continental Engine, 3½x4½; 25.3 Horsepower; Stromberg Carburetor; Atwater-Kent Ignition; Ward-Leonard Two-Unit Starting and Lighting; Borg & Beck Clutch; Wheelbase, 115 Inches. Priced $1250 f. o. b. Detroit, Mich.**

**Philadelphia, Penn.;** George Goode; one-story brick garage, 15.6x20; at 4325 North Darien street; for George Rodgers; $580.

**Philadelphia, Penn.;** G. F. Stuempfig; brick community garage, 34x16, with wing 72.6x19, rear 1343 West Venango street; $3000.

**Philadelphia, Penn.;** A. Warshovsky; one-story stone garage, 23x48; at 5554 Heiskell street; for S. Fisher; $800.

**Philadelphia, Penn.;** Keller Bros.; one-story brick and hollow tile garage, 16x33; at 533 Hermit lane; for Harry Helms; $500.

**Philadelphia, Penn.;** J. Sims Wilson & Co.; one-story brick garage, 30x82; at 1210-12 West College avenue; for West Girard Agency; $5000.

**Philadelphia, Penn.;** Elmer C. Snyder; one-story brick garage, 13x22; at 706 North American street; for Benjamin Hardock; $500.

**Philadelphia, Penn.;** Philip Halbach Contracting Co.; two-story brick garage, 51.8x306x5; southwest corner 16th and Ingersoll street; for Brighton Garage; $38,000.

**Philadelphia, Penn.;** L. W. Kitselman; five one-story brick garages, each 10x20; east side Musgrave street, north of Slocum street; for George W. Williams; $2500.

**Reading, Penn.;** G. P. H. Sherman, 722 N. Front street; one-story garage, 20x60; for Dr. C. P. Henry, 846 Centre avenue; $2800.

**Wilkes-Barre, Penn.;** John A. Schmitt Sons, Bennett building; one-story garage, 22x34; for Dr. P. P. Moyach, 70 S. Main street; $3000.

**Woonsocket, R. I.;** Frank Avallone, 24 Main street; one-story public garage, 50x60; for Charles Strembaum, 541 E. School street; $6000.

**El Paso, Tex.;** Blaudett & Cropper: one-story garage; for James L. Marr & Co.; $6500.

**Charleston, S. C.;** McCrady Bros. & Cheves; one-story garage; $3500.

**Beaumont, Tex.;** Herman Wever; one-story brick garage, 42x120; asbestos roof, concrete floors, electric lighting; for T. S. Reed Grocery Co., Bowie and Fannin streets; $5000.

**Wichita Falls, Tex.;** Taylor Bros.; brick automobile building, 50x150; for George Davis. Lessee, Elgin Auto Sales Co.

**Lexington, Va.;** J. C. Loyale; fireproof garage for Blue Front Garage; J. N. Hotinger, Murat, Va., president; incorporated with capital of $15,000.

**Richmond, Va.;** E. H. Armentrout, 1734 N. 20th street; two-story salesroom, 67x127; for G. L. Worsham, Governor and Ross streets; $20,000.

**Charleston, W. Va.;** Wallace Knight, Solof building; two-story garage, 68x162; for Board & Duffield, 1010 Virginia street; $14,000.

**Charleston, W. Va.;** David Dick, Masonic Temple; one-story garage, 40x85; for Matthews Storage Co., 600 Capital street; $3500.

**Antigo, Wis.;** C. F. Dallman, 1019½ Fifth avenue; one-story garage, 44x38; for Frank Randall; $2000.

**Milwaukee, Wis.;** Odya Bros., 1127 Bremer street; one-story garage, 24x31; for A. Meyers, 543 Cramer street; $1000.

## Factories, Garages and Repair Shops.

**Newport, Ark.;** Hutson Barker Auto Co. will erect another garage.

**Fresno, Cal.;** A. D. McAlpine will build a motor sales building on J street.

**Jacksonville, Ill.;** Howard Zahn has let the contract for the erection of a 67x100 foot two-addition to his garage on East Morgan street.

**Logansport, Ind.;** Revere Motor has begun the erection of a manufacturing building to cost $50,000.

**South Bend, Ind;** Studebaker Corp. will build a machine shop to cost $200,000 at Kendall and Sample streets.

**Lansing, Mich.;** Duplex Truck Co. will erect a factory, 72x600 feet, two stories high, without a basement.

**Eveleth, Minn.;** Charles Jesmore is erecting a new garage on Grant avenue.

**Cole Camp, Mo.;** E. H. Forrest will operate a garage.

**Higginsville, Mo.;** Layne Bros. will erect a garage building to be 50 by 140 feet.

**Benson, Neb.;** Charles T. Olson & Son will erect a large garage to cost $10,000; the building will have 8500 feet of floor space and will be used as a Ford agency and garage.

**Omaha, Neb.;** Charles Miller will erect a one-story garage building at 1630 Vinton street, to cost approximately $6000.

**Brooklyn, N. Y.;** Max Baker will erect a garage at 500 Snediker avenue. It will be one-story, brick, 22x18 feet, and will cost $1000.

**Weleetka, O.;** B. O. Simms is erecting a garage to be built of stone with cement floor.

**York, Penn.;** J. W. Richley, 250 East Market street, will erect one of the largest garages in the city.

**Marion, S. D.;** Hieb Bros. will erect a one-story garage to be 42x70 feet.

**Dallas, Tex.;** R. E. Traube will open a large sales depot here to distribute Moon cars.

**San Angelo, Tex.;** Arthur F. Collins is erecting a one-story brick garage.

## Alterations, Improvements and Additions.

**Turon, Kan.;** The Botner Garage is having an addition, 20x30 feet, built to the rear of the garage.

**Hammond, Ind.;** The Railway Motor Car Co. will erect an addition to its machine shop 350x100 feet, to cost $50,000.

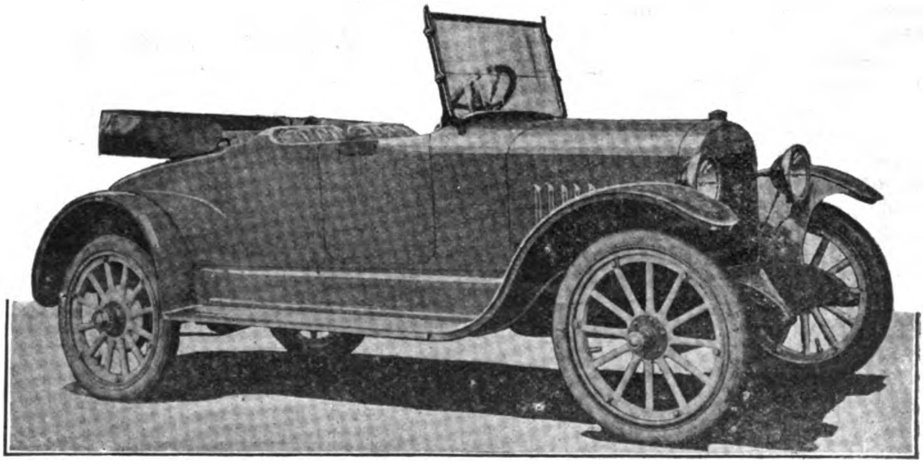
**Monroe, Ill.;** The Monroe City Auto Co. has remodeled the brick livery barn into a garage and has removed to the new quarters. A storeroom and repair shop has been installed in the rear of the building.

**Rockford, Ill.;** I. L. Cutting has become owner of the property at 117 South Second street and will remodel it for a garage and automobile exchange.

**Florence, Kan.;** Robinson Bros. has bought the Kornhaus blacksmith shop and is having it remodeled into a garage.

**Duluth, Minn.;** The Oldfield Motors Corp. is having the Atlas building remodeled into a factory where it will manufacture Oldfield motors.

# Four-Cylinder Olympian Roadster



**Made by Olympian Motors Co., Pontiac, Mich., and Priced at $965. L Head Engine Cast en Bloc, 3¾x4¼; 37 Horsepower; Connecticut Automatic Distributor Ignition; with Autolite Starting Motor; Left Drive; Full Floating Rear Axle; Wheelbase, 114 Inches.**

ACCESSORIES
AND
EQUIPMENT

## OSPECO WINDSHIELD PARTS.

No car being considered as having a complete equipment without a windshield, the usefulness of the windshield depends directly upon its flexibility and different adjustments. The Ospeco windshield parts are designed for converting the present Ford non-adjustable windshield into an adjustable one. They consist mainly of two side brackets and four friction hinges, which can be attached to the Ford windshield in a very few minutes by merely removing and replacing several screws, thus making a perfect clear vision, ventilating and slanting windshield.

**Manufactured by the Ospeco Mfg. Co., Inc., Detroit, Mich. Price $5 complete**

## 1500 GOOD TOOLS.

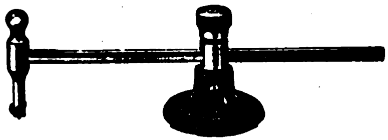
"Fifteen Hundred Good Tools" is the title of tool book No. 13 issued by Goodell-Pratt Company of Greenfield, Mass. This great, little book is 3¾ by 5½ inches, contains 432 pages, and is fully illustrated. Not only is this book useful as a catalogue, but also as a reference.

**This book is free to everyone sending their name and address to Goodell-Pratt Company, Greenfield, Mass.**

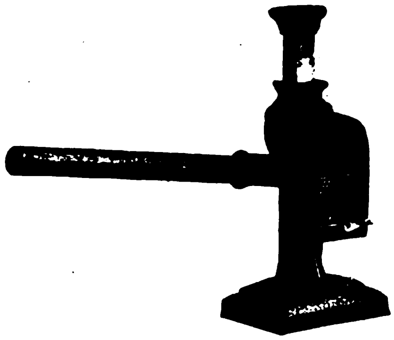
## STARRETT RATCHET WRENCH.

In places difficult of access or in cramped quarters where a swing through a long arc is impossible, the ordinary monkey or S wrench is out of the question. Some other means of turning nuts and bolts is required. To meet these conditions the Starrett ratchet wrench has been designed. It consists of a ratchet with reversible pawl and a long wrench handle (C). With this wrench is also furnished an extension (C) to reach into otherwise inaccessible places; also a universal joint (F) for turning nuts or bolts when it is impossible to get the wrench on at right angles to the ends of the bolt; a spark plug socket (E); a drilling attachment (H), which takes standard square shank drills from ⅛ of an inch to ½ inch diameter, and a screw driver (G) with reversible end: together with several adjustments to go with the drilling attachment.

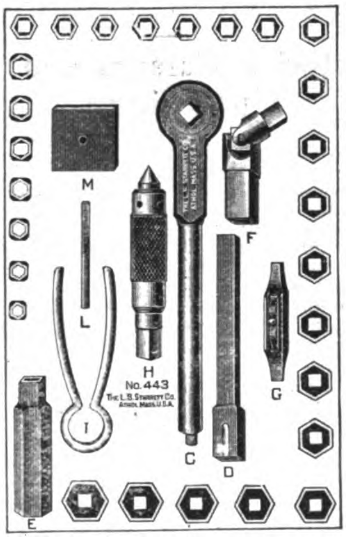
**Manufactured by the L. S. Starrett Co., Athol, Mass. Price complete, $15. Without drill fixtures, $12.**



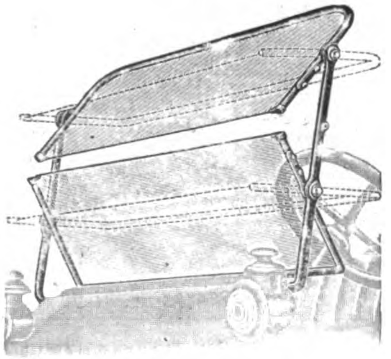
Circular Glass Cutter.



Hartford Auto Jack.



Components of Starrett Ratchet Wrench Set.



Ospeco Windshield Parts.

## CIRCULAR GLASS CUTTER.

There is a constant call for replacement of headlight glasses that are so frequently cracked or broken, yet very few garages are equipped to cut circular glasses for replacement with any degree of accuracy or speed. The glass cutter shown in the illustration has a graduated beam that can be quickly and firmly set to cut circles of any size from two to 12 inches in diameter. Each of the cutters is provided with a high grade cutter wheel which has been carefully honed and tested by actual cutting before being mounted in the tool. The standard is equipped with a rubber base to prevent slipping.

**Manufactured by Goodell-Pratt Co., Greenfield, Mass. Price, 70 cents.**

## HARTFORD AUTO JACK.

Absolute reliability is essential for every automobile jack, and such is claimed for the Hartford Auto Jack, which is constructed by skilled workmen. The gears are turned from solid steel and are encased in a malleable iron housing with a broad, firm base. The gear ratio, together with the long handle and short stroke, admits the easy lifting of great weights. It is claimed that a pressure of 15 pounds on the handle develops 1000 pounds of lifting power on the rack; sufficient force to lift the largest car with ease. This jack is finished in black enamel and is a practical equipment for any car, light or heavy.

**Manufactured by the Edward V. Hartford, Inc., 147 Morgan St., Jersey City, N. J. Write for catalogue and prices.**

## THE MAXOTIRE.

Tire expense is the constant trouble of the motorist. Tire trouble is one of the greatest enemies of automobile comfort and every automobile owner is constantly on the alert to prevent in every way this form marring the pleasure of the journey. In the Maxotire the manufacturers think that the great problem is solved and that tires can be made to give greater mileage without annoyance if their product is used. The Maxotire is not a reliner, in any sense of the word, it is really a separate shoe which is fitted between the ordinary shoe and the tube.

One edge of the Maxotire is made like

a straight side tire, having a very tough endless steel hoop, which is laid in the rim and fits snugly to it. It is impossible for this side to pull up or blow out. The opposite side of the Maxotire has no hoop in it, but is made very wide so as to cross between the tube and rim and up to the other side of the tire past the hoop, completely encircling the tube, and affording protection to it from rim pinches and chafing. Offering the protection that it does, Maxotire may be used with good results in blown out shoes, greatly increasing the mileage and reducing the cost.

**Manufactured by K. & W. Rubber Co., Third St., Ashland, O. Send for prices and catalogue.**

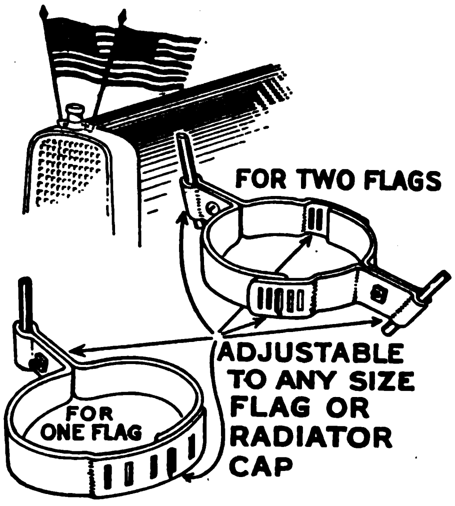
## INSYDE TYRES.

The prospect of adding from 1000 to 5000 miles to the life of a casing should interest every motorist. Insyde Tyres have been designed to do just this the manufacturers say. They are made of heavy tough fabric, vulcanized together over tire moulds so that they exactly fit the shoe. The outside is coated with rubber, which eventually vulcanizes itself to the casing and prevents slipping. The inside is treated in such a manner as to prevent it sticking to the tube. It is claimed that by means of an insyde tyre the air pressure strain is removed from the casing, thus leaving it free to carry the weight of the car alone.

**Manufactured by American Automobile Accessories Co., 621 Main St., Cincinnati, O. Prices upon request.**

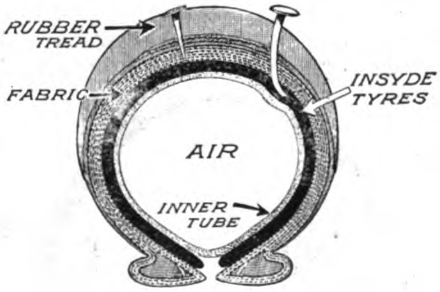
## SIMON'S CHIEF SELLERS.

Seven interesting automobile accessories which are designed for making the car comfortable are known as Simon's Chief Sellers. The curtain carrier, which is attached to the back bow of the tonneau, protects the side curtains against breakage, as they are carried rolled instead of folded. Being in the top of the car they are always within instant reach, protected against dust and weather. A handy pocket for books, samples, small tools, etc., may be fastened to the doors of Ford cars with a few tacks. This pocket is made of black fabrikoid to match the upholstery, and is a very attractive fitting. Made of three-ply basswood, enamel covered, fiber bound and riveted with brass lock and bolts to the running board trunk may be attached to either the running board or rear trunk rack and provides a receptacle for holding suit cases, keeping them free from road dust and dirt. A neat and close fitting adjustable hood and radiator cover with front curtain forms a protection against cold in the winter time, and a noticeable saving of fuel. A protection for the lamp against rain and snow, as well as an effectual glare stopper, is provided in the Simon lamp dimmer for Ford cars. This device is designed to buckle under the lamp. A rear window of transparent celluloid, with bound edges and fitted with eyelets and clasps for attaching to replace broken lights.


FOR TWO FLAGS
ADJUSTABLE TO ANY SIZE FLAG OR RADIATOR CAP
FOR ONE FLAG

Dow Flag Holders.

**Manufactured by S. Ç. Simon & Co., 404-412 Brown St., Philadelphia, Penn. Prices as follows: Curtain Carrier, 75 cents; Window Light, 25 to 60 cents, according to size; Draft Shield, 50 cents; Door Pocket, $1; Running Board Trunk, from $8 to $20, according to size; Adjustable Hoods to fit all cars, write for prices; Lamp Dimmers, 20 cents each. Write for descriptive catalogue of other**



Goodrich Auto Switch.

## DOW FLAG HOLDERS.

"Be Patriotic" is the slogan of today, and every automobile driver should display the Stars and Stripes on his machine. The Dow flag holders are designed for either one or two flags and an ingenious arrangement makes it possible to adjust them to practically any size flag or radiator cap.

**Manufactured by Dow Wire and Iron Works, Inc., Louisville, Ky. Price single holder, 35 cents; or double, 45 cents.**

## PIPE AND CIGAR LIGHTER.

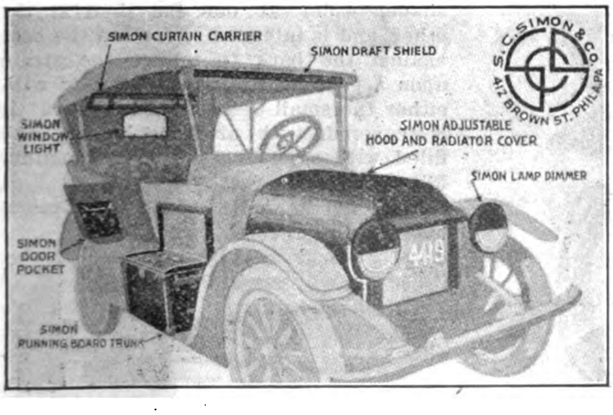
There is nothing more annoying to the motorist than to be obliged to slow up his car or pull up to the curb in order to light his pipe or cigar. The device shown in the illustration herewith is designed especially for lighting the pipe, or can be used equally well for lighting a cigar or cigarette. When the motorist wishes to light his pipe or cigar he simply reaches for the lighter, takes it from the holder, presses the button and a light is immediately available, wind or weather making no difference to the action. The pipe lighter is equipped with 10 feet of cord and designed for connection with the storage battery. The cord is automatically reeled up when not in use upon a special winder by spring tension.

**Manufactured by the Metal Specialties Mfg. Co., 732 West Monroe St., Chicago, Ill. Price complete with winder, $4. Without winder, $1.50.**

## GOODRICH AUTO SWITCH.

The old maxim "it is useless to lock the barn after the horse is stolen," applies today to automobiles, and the wise motorist is careful to apply the "ounce" of prevention by locking his car when he leaves it. The Goodrich auto switch is equipped with a Yale lock and designed for application to the Ford car coil box. When the key is turned the ignition current is automatically cut off. The turning of the key also accomplishes one other thing; two small shutters are automatically turned over so as to cover the screw heads, which fasten the lock to the case, thus making it impossible to remove the lock.

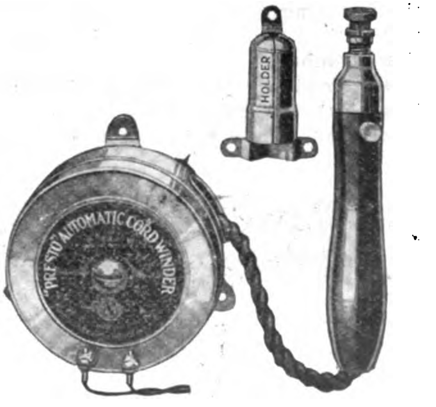
**Manufactured by Goodrich-Lenhart Manufacturing Co., Widener Bldg., Philadelphia, Penn. Write for prices and literature.**



Simon's Chief Sellers.

YALE
LOCK SWITCH
YALE
RG
BAT.

Insyde Tyre Application.



Pipe and Cigar Lighter.

## THE HOLDFORD BRAKE.

Worn out or inefficient brakes are the causes of many of the serious accidents attributed to "car got beyond control of operator." The Holdford Brake, as the name indicates, is designed primarily for Ford cars and may be used in addition to those on the car, or to take the place of either the service or emergency brakes. This brake is made from the best of materials, the points where the greatest strain comes are drop forgings, and the lining is J. M. Non-Burn. It is so designed as to be efficient under all conditions, bringing full contact with the external surface of the brake drum, after the first adjustment, until the lining is completely worn out. It may be connected to the foot pedal by means of an equalizing bar, thus relieving the transmission of strain and furnishing a positive brake at all times. In using it on the hand lever the internal brake may be left inside the brake drum or thrown away, according to the car owner's pleasure. In applying the brake, no changes in the car are necessary.

**Manufactured by the G. H. Dyer Co., Cambridge, Mass. Price per set when applied to hand lever, $8.50; for application to foot pedal, $10.**

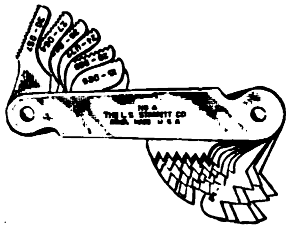
## WILMO MANIFOLD.

How long will the world's supply of gasoline last? is the question that is commanding the attention of scientists and laymen everywhere. It is said that, based upon present day rate of consumption, the supply will be exhausted in about 27 years. At all events, the ever increasing consumption of gasoline demands conservation.

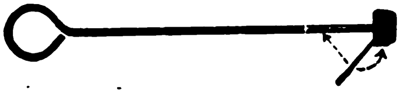
Interesting tests made by the technical representative of the American Automobile Association show an increased gasoline mileage of from 42% to 54% as a direct result of Wilmo Manifold efficiency. Tests made in Chicago before a body of representative newspaper and magazine men show as high as 59% increased mileage.

This gasoline efficiency is said to be insured by the Wilmo Manifold, a unique device, which attaches to any L head engine, and becomes a permanent part of the engine. It combines the function of both intake and exhaust manifolds. The exhaust gases passing out through the upper chamber heat a dividing wall, which in turn superheats and vaporizes the incoming mixture as it comes in contact with it before entering the combustion chamber.

**Now made by the Whittier Company, First National Bank Bldg., Chicago, Ill. Prices range from $7.50 to $15, according to make of car.**



Screw Pitch Gage.



Fawsco Combination Cleaner.

## FAWSCO COMBINATION WRENCH.

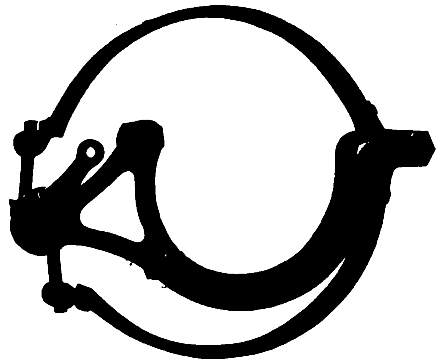
To lengthen your arm is seemingly a physical impossibility, but when taken as an advertising slogan in connection with a tool which gives the same result, it seems fairly appropriate. Many shirts and coats have been ruined by owners of Ford cars trying to reach under their car to test the amount of oil in the crank case. The tool illustrated herewith is just as effective as one's fingers and saves the annoyance and cuss words. It is a combination gasoline gauge, oil cock wrench and cleaner; and the claim is made that it will not only measure the gasoline in the tank, but provide the only sure means of learning whether there is oil in the crank case, as the pin will prove if the oil cock is stopped up or the oil exhausted. It is made of nickel plated, coppered, Bessemer steel rod, with a very high class finish.

They are put up in complete packages for the convenience of the trade and dealers are furnished with a very handsome counter display card, upon which is mounted one of the tools, which helps considerably in their sale.

**Manufactured by J. H. Faw, Inc., 41 Warren St., New York City. Retail price, 35 cents.**

## ADJUSTABLE WRENCH.

An attractive and serviceable wrench is shown in the illustration. This wrench is of a somewhat different design from the ordinary wrench in that the adjustable jaw slides on two steel guide rods, which are cast into a polished aluminum handle. The jaws are made of case hardened steel and the adjusting nut of the small size wrench runs on roller bearings. This wrench is made in two sizes, six and 10-inch.



The Holdford Brake.

**Manufactured by Goodell-Pratt Co., Greenfield, Mass. Price on large size, $2; on small size, $1. Write for special catalogue of 1500 tools.**

## CENTURY CIGAR LIGHTER.

For the touring motorist there are few accessories quite so convenient as an electric cigar lighter. It makes no difference what speed the car is going or how brisk the wind is, such a device makes the lighting of a cigar an easy matter. The Century cigar lighter is made to operate on a six-volt storage battery, it is neat in appearance, being finished in black leather with nickel trimmings. It is equipped with seven feet of silk cord, a push switch, and may be attached in a very few minutes.

**Manufactured by Mabey's Electric and Manufacturing Co., Indianapolis, Ind. Price complete, $1.**

## SCREW PITCH GAGE.

There is no convenience that is more helpful to the repair man than a screw pitch gage with which the pitch of a thread may be determined. The gage illustrated, No. 4, has 24 pitches, ranging from four to 30, and the blades are cut narrow, permitting them to be inserted in small nuts, so that both internal and external threads may be measured. Each blade is marked with the number of threads per inch, as well as a decimal from which the drill diameter may be determined for drilling for either V or flat threads. It is also a convenient tool to use as a 60 degree centre gage and as a gage to test the grinding of either an inside or outside threading tool.

**Manufactured by the L. S. Starrett Co., Athol, Mass. Price, $1.25.**

## BACK-EASE CUSHIONS.

The pleasure of a long ride is often marred by back strain. The Gordon Back-Ease Cushion is made in triangle shape, wider at one end than at the other, and is intended to rest on the seat against the back to relieve the strain upon a passenger. It may be used with either the small or large end upward. It is covered with artificial leather and filled with a good grade of upholstery filling.

**Made by the J. P. Gordon Co., Columbus, O. Price, $2.50.**

PAT'D
This Hot Plate Does the Work

The Wilmo Manifold.

Century Cigar Lighter.

Adjustable Wrench.

## PILLSBURY HUBPUL.

Uncertainty as to road conditions will encourage the average car or truck owner to provide himself with a means of extricating his machine should it get stuck. A device which is designed for such a purpose is known as the Pillsbury Hubpul, which consists of a combination hub cap, wheel puller and drum or device for pulling the car from mud, etc. It is easily attached to each rear wheel and utilizes the power of the automobile engine for effecting a dislodgment. A rope or cable is fastened to one of the wheel spokes, while the other end is anchored to a stake, pole, tree or other stationary object. When the engine is started the slipping wheels wind the cable over the drum and the car is gradually pulled forward. The strain on the engine is said to be very slight, on account of the large leverage obtained by the reduction through the reels or drums.

The device is finished in nickel or japanned and is made exclusively for Ford and model 490 Chevrolet cars.

**Manufactured by Pillsbury Manufacturing Co., Minneapolis, Minn. Prices, $4 japanned and $6 nickeled.**

## WATER GAS CARBURETOR.

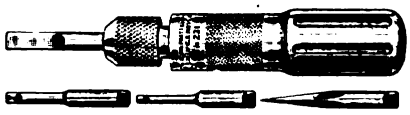
For a long time engineers have been experimenting with gasoline engines on the line of the introduction of steam into the cylinders. Many of the experiments seemed to indicate that if steam or water and air were injected in the right proportions into the cylinders there was an increase of power, a decrease of fuel consumption and a reduction of carbon deposit. The Water Gas Carburetor outfit is designed to introduce the right amount of water or vapor into the engine. The outfit consists of a nine-pint copper tank with brackets for installation, 10 feet of copper tubing with fittings and the Water Gas Carburetor. Suction from the intake manifold draws filtered water from the tank into the Water Gas Carburetor (a double jet sight feed set in the instrument board). Controlled automatically to correct speed by an air balanced governor, the water is fed by the carburetor, drop by drop, through the copper tube into a coil wrapped around the hot exhaust pipe. Here it is converted into steam and is sucked into the cylinders through the manifold.

**Manufactured by the Water Gas Carburetor Co., Kansas City, Mo., or Fifth avenue, New York.**

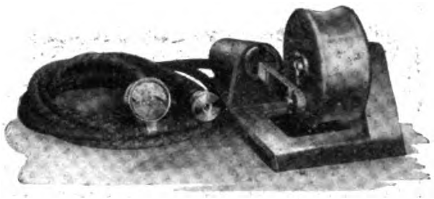
## RAYBESTOS SUITS.

In order to further a national advertising campaign the Raybestos company of Bridgeport, Conn., are offering an extremely interesting proposition both to trade interests and automobilists in general. One-piece suits which are guaranteed by the manufacturer to prevent all oil, dirt or grease from soiling the clothes of the wearer are being furnished at cost prices by this concern. These suits are well made of heavy fabric in a choice of three weights at different prices, and have Raybestos advertising name printed across them. For the garageman who sells this product it affords good advertising; for the machine owner, such advertising matter is not objectionable, as he is able to get a good suit at an extremely low price.

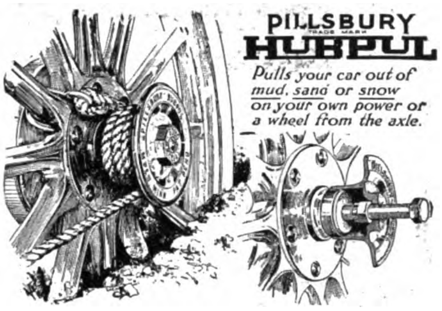
**For further details and prices write to the Raybestos Co., Bridgeport, Conn.**



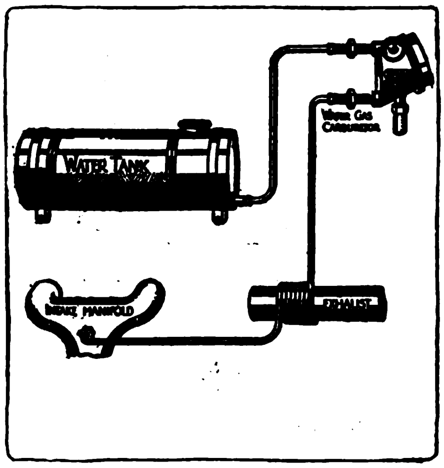
Pocket Screw Driver.



The S-H Tire Pump.


PILLSBURY
TRADE MARK
HUBPUL
Pulls your car out of mud, sand or snow on your own power or a wheel from the axle.

Pillsbury Hubpul.



Water Gas Carburetor Outfit.

Raybestos Suits.

## POCKET SCREW DRIVER.

One of the 1500 good tools manufactured by Goodell-Pratt Co. is the little pocket screw driver, which is especially handy around the automobile for the reason that it is always handy in the pocket. The handle is made of steel, nickel plated, so that it will not rust. The chuck may be reversed and fitted into the handle in such a manner that the extreme length of the tool is but 3¼ inches. Complete with three blades and a reamer it weighs but four ounces and is easily carried in the pocket.

**Manufactured by the Goodell-Pratt Co., Greenfield, Mass. Price 80 cents.**

## LAMINUM.

Laminum is a substance consisting of a number of sheets of brass .002 or .003 of an inch thick, firmly held together by a metallic binder. The appearance is that of a solid piece, yet each sheet may be peeled off, leaving the thickness slightly less than before. It may be purchased in sheet form as illustrated, or made up into the shape of bearing shims. After the leaf has been peeled off the resulting surface is said to be absolutely smooth, without grain or grit of any kind. The advantages claimed for this type of shimming material are that it is solid, offering no surface for grit to adhere to and that necessary adjustment may be obtained without filing, leaving the surface smooth and flat.

**Manufactured by Laminated Shim Co., Inc., Canal St., New York, N. Y. Send for booklet and prices.**

## THE S-H TIRE PUMP.

Designed with the intention of eliminating tire inflation trouble, the S-H tire pump should prove a boon to the motorist. This little pump is only 10 inches long by four inches wide and weighs but seven pounds. To operate it is only necessary to jack up one of the rear wheels, place the friction wheel of the pump under the tire, start the engine and a steady flow of air for tire inflation is furnished. The equipment consists of the pump, a tire gauge and a long, flexible air hose.

**Manufactured by the S-H Pump Co., Chicago, Ill. Price complete, $8.**

LAMINUM
PATENTED IN U.S.A. AND ALL FOREIGN COUNTRIES
STOCK SHEETS 6" WIDE BY 36" LONG

Laminum in Sheet Form.

### ILLUMINATED RADIATOR FLAG.

Now that the feeling of real war is sweeping over the country, automobile drivers and owners insist on flying the American flag from their cars. Up to the present time most any crack or crevice in the front of the car, into which a flag stick could be put, has been pressed into this patriotic service.

This practise has not been altogether satisfactory on account of the constant whipping of the flag while the car is in motion. The flag must be put on securely to give satisfaction.

The producers of the Howe Spotlight have introduced a specially made illuminated radiator flag, with carrier, that can be attached to any radiator cap. The upright or pole is made of nickeled tubing, 12 inches high. Through the tubing the light cord is brought to the light on the top of the upright. The light, which is necessarily a small one, is protected by a highly polished nickel plate deflector—shaped so that the light rays are put on the flag, yet no direct rays reach the driver. The flag is six by eight inches, of high grade silk, with ends protected so that they will not whip out easily. The upright is held securely by a universal clamp, which permits the removal of the radiator cap without disturbing the clamp.

The clamp will serve as an ordinary flag holder and may be purchased separately.

**Made by the Howe Mfg. Co., Chicago, Ill. Price for complete outfit, $1.25; without bulb, $1; for clamp alone, 35 cents.**

### UTILITY VARNISH RENOVATOR.

A varnish renovator and cleaner, applied by the spray method, which is highly desirable both to the garage owner and car driver, is known as the Utility Varnish Renovator. The manufacturers claim that this cleaner will remove road tar, and that it contains no chemicals that will damage the finish in any way, being non-acid and non-alkaline.

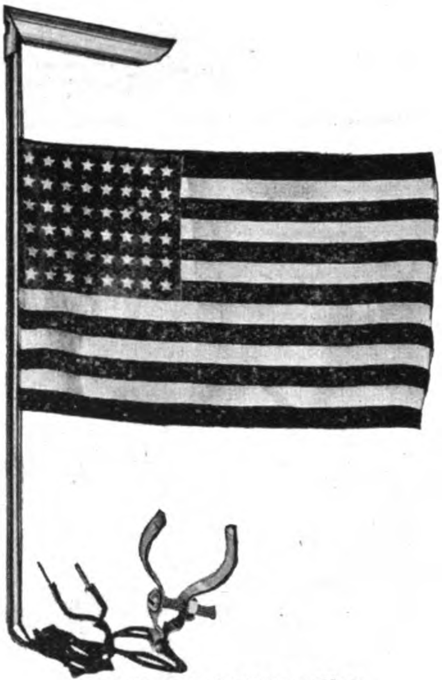
The manufacturers make an attractive proposition to dealers and request that they write for particulars and special prices.

**Manufactured by Poughkeepsie Utilities Corp., 36 Winnikee Ave., Poughkeepsie, N. Y.**

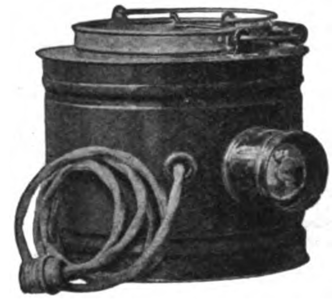
### SHALER VULCANIZER.

The accompanying illustration shows the unique display carton in which the Shaler five-minute vulcanizer is being supplied to dealers. The cover of the stand provides for a real vulcanizer to be fastened to a section of inner tube, showing both the method of operation and a completed repair. Opposite the vulcanizer is a match, slipped in a little holder. The color scheme and idea are striking and the combination forms an ideal "Silent Salesman" of the Shaler vulcanizer.

**Manufactured by C. A. Shaler Company, Waupun, Wis. Write for details.**



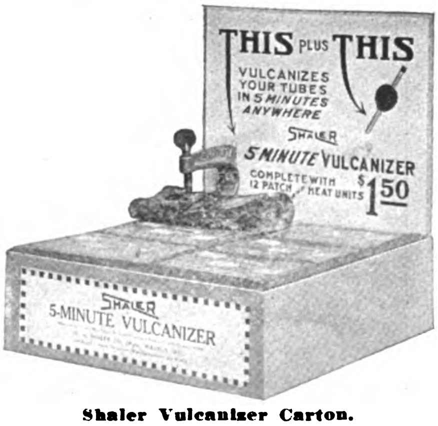
Illuminated Radiator Flag.



Mabey Electric Glue Pot.

Clean Your Automobile "Utility" Way
UTILITY VARNISH RENOVATOR
NON-ACID NON-ALKALI

Utility Varnish Renovator.



THIS PLUS THIS
VULCANIZES YOUR TUBES IN 5 MINUTES ANYWHERE
SHALER 5 MINUTE VULCANIZER
COMPLETE WITH 12 PATCH HEAT UNITS $1.50
SHALER 5-MINUTE VULCANIZER

Shaler Vulcanizer Carton.

### ELECTRIC GLUE POT.

An accessory which is bound to be of much value in any garage is known as Mabey's electric glue pot. This glue pot is said to be extremely economical, due to the fact that the consumption of current is kept down to a minimum because the insulation prevents loss of radiation. The fire hazard, which should be kept down in a garage, is eliminated by this form of heater, which generates neither soot nor smoke.

The heat retaining jacket is constructed of heavy ingot iron, finished in black enamel, with copper glue cup and wiping rod. Each pot is suplied with a six foot cord, plug and three-heat switch for 110 volt circuit. It is made in four sizes from one to four quarts capacity.

**Manufactured by Mabey Electric and Manufacturing Co., 968 Fort Wayne Ave., Indianapolis, Ind. Write for prices.**

### CLEANABLE COLLARS.

Every motorist at some time or other has been put to the embarrassment of having to wear a collar that has become grease or dirt spotted because of road repairs. Such motorists will appreciate the Challenge branch of Cleanable Collars. These collars are made of a high grade cotton fabric, with stitched edges, and given the same dull linen finish as ordinary collars, they are then waterproofed. These collars are easily and quickly cleaned with a damp cloth and soap and may be obtained in standard half sizes and many styles.

**Manufactured by the Arlington Co., 725 Broadway, New York, N. Y. Write for prices and catalogue of styles.**

### STEEL BELT LACING.

The efficiency of an automobile engine is dependent upon the proper action of the cooling system, and the working of the cooling system is in many cases dependent upon the action of the fan belt. Unless the action is smooth there is a constant vibration, for this part travels very fast. The alligator steel lacing is designed for connecting the ends of belt up to practically any width. Its application is simple. Simply cut off a strip the width of the belt and pound it on to the ends with a hammer, inserting proper length of hinge pin.

**Manufactured by Flexible Steel Lacing Co., Clinton St., Chicago, Ill.**

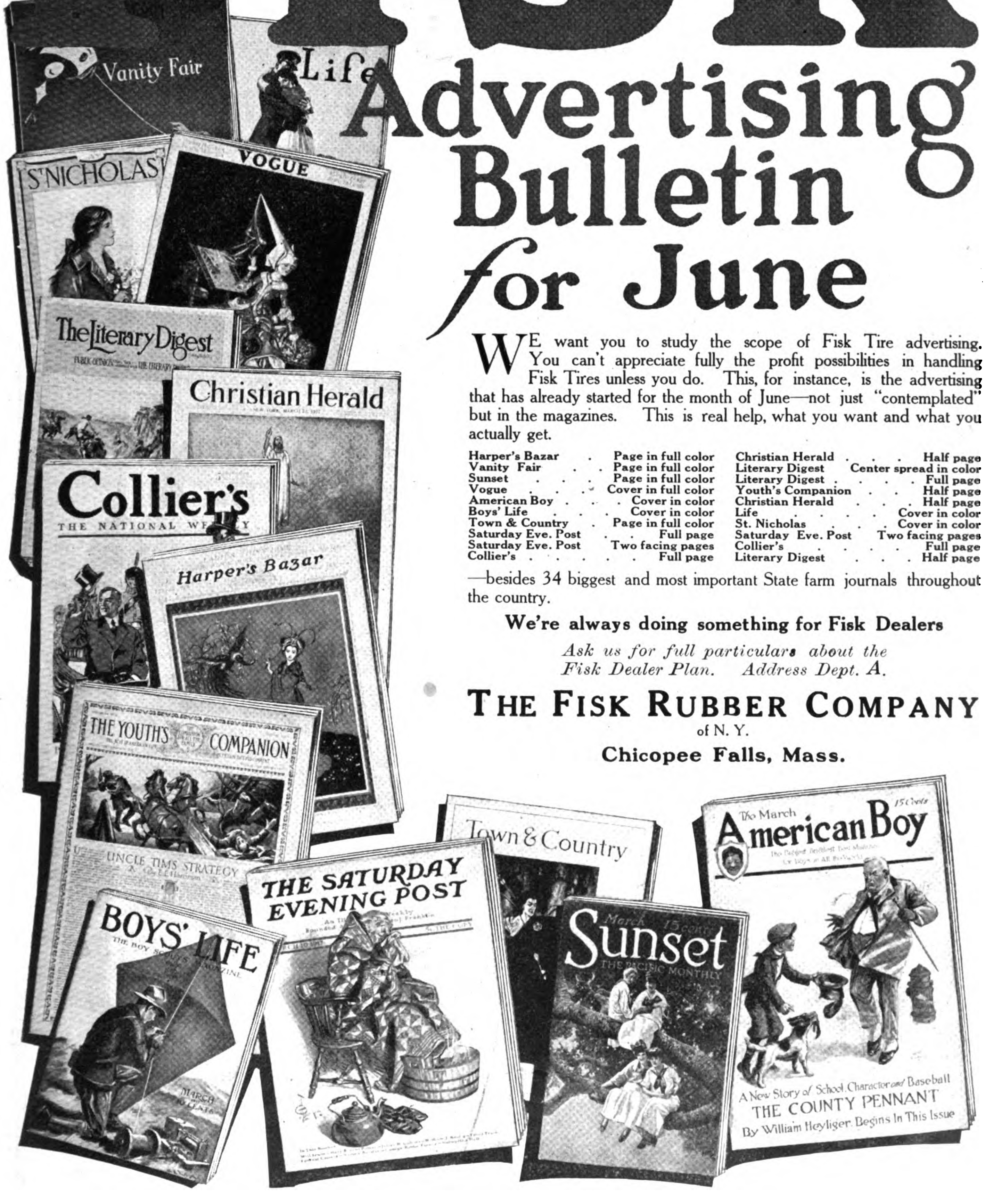
### FOLDING WATER PAIL.

A handy accessory, either for the camper or autoist, is introduced under the name of Duplex water pail, which is made of brown water proofed canvas and so designed as to stand alone when full of water. This is made possible by the reinforcing parts of rust proofed steel, which are so made as to permit the folding up of the pail into a very small compass.

**Manufactured by the Planet Co., Westfield, Mass. Prices for six-quart size, $1; for 10-quart size, $1.50.**

# FISK

# Advertising Bulletin for June


Vanity Fair
Life
St Nicholas
VOGUE
The Literary Digest
Christian Herald
Collier's
THE NATIONAL WEEKLY
Harper's Bazar
THE YOUTH'S COMPANION
UNCLE TIMS STRATEGY
BOYS' LIFE
THE BOY SCOUTS' MAGAZINE
MARCH
THE SATURDAY EVENING POST
Town & Country
Sunset
THE PACIFIC MONTHLY
March 15 cents
The March American Boy
15 Cents
A New Story of School, Character and Baseball
THE COUNTY PENNANT
By William Heyliger. Begins In This Issue

WE want you to study the scope of Fisk Tire advertising. You can't appreciate fully the profit possibilities in handling Fisk Tires unless you do. This, for instance, is the advertising that has already started for the month of June—not just "contemplated" but in the magazines. This is real help, what you want and what you actually get.

| | | | |
|---|---|---|---|
| Harper's Bazar | Page in full color | Christian Herald | Half page |
| Vanity Fair | Page in full color | Literary Digest | Center spread in color |
| Sunset | Page in full color | Literary Digest | Full page |
| Vogue | Cover in full color | Youth's Companion | Half page |
| American Boy | Cover in color | Christian Herald | Half page |
| Boys' Life | Cover in color | Life | Cover in color |
| Town & Country | Page in full color | St. Nicholas | Cover in color |
| Saturday Eve. Post | Full page | Saturday Eve. Post | Two facing pages |
| Saturday Eve. Post | Two facing pages | Collier's | Full page |
| Collier's | Full page | Literary Digest | Half page |

—besides 34 biggest and most important State farm journals throughout the country.

**We're always doing something for Fisk Dealers**

*Ask us for full particulars about the Fisk Dealer Plan. Address Dept. A.*

**THE FISK RUBBER COMPANY**
of N. Y.
**Chicopee Falls, Mass.**

**(When Writing to Advertisers, Please Mention the Accessory and Garage Journal.)**

NEW YORK CHICAGO BOSTON DETROIT

Subscriptions:
The United States and Mexico
$2.00 a year; Canada, $3.00;
Foreign Countries in Postal
Union, $4.00 a year
20 cents a copy.

THE ACCESSORY —AND— GARAGE JOURNAL

Remittances:
Should be made by Check, Draft,
Postoffice or Express Money
Order, or Registered Letter.
Money enclosures must
be at sender's risk.

William H. Black, Treasurer.
AUTOMOBILE JOURNAL PUB. CO.

Published the 15th
of Each Month.

D. O. Black, Jr., Secretary
Times Building, Pawtucket, R. I.

Entered as second class matter, December 30, 1911, at the Postoffice at Pawtucket, R. I., under Act of Congress of March 3, 1879.

## Dealers---Garage ---Repairmen

## We Offer Liberal Discount On Auto Parts

### *Get Our Discount Card*

We are registering all the legitimate dealers, garage men and repair men in the country. Offering a liberal discount on auto parts we carry in stock.

We are the original pioneer auto part distributors. We have acquired through outright purchase of many automobile companies and are acquiring others constantly. This huge organization enables us to serve you in a prompt and satisfactory manner. Supplying you practically any part for your car at reasonable prices.

Over 2,000,000 parts in stock. What do you need? We can save you money.

**Write today for our discount card.**

**Puritan Machine Company**
**All Parts for All Cars**
**51 Tenth Street, Detroit, Mich.**

## WE OWN EXCLUSIVELY THE ORIGINAL SERVICE DEPARTMENTS

Of the following: American Motors Co., Marion Motor Co., Herreshoff Motor Co., De Tamble Motors Co., L-P-C Motor Co., Bimel Auto Co., Enger Motor Car Co.

**AMERICAN MOTORS PARTS CO.,**
**Manufacturers of Auto Parts,**
**430 No. Capitol Ave.,**
**Indianapolis, Ind.**

## BARGAINS

| | |
|---|---|
| **MAGNETOS.** | |
| Bosch Du-4 Variable spark | $30.00 |
| Bosch Du-4 set spark | 25.00 |
| Bosch D4 and Dr4 | 25.00 |
| Bosch D6 and Dr6 | 30.00 |
| Splitdorf 4 cyl. Dixie, high tension | 25.00 |
| Splitdorf 4 cyl., Models A, T, X and D | 10.00 |
| National 4 cyl. low tension | 8.00 |
| Briggs 4 cyl. low tension | 8.00 |
| Remy 4 cyl., type R L | 15.00 |
| Simms SU4 high tension | 22.00 |
| **GENERATORS.** | |
| Deaco 6 volt | $12.00 |
| Auto Lite 6 volt | 15.00 |
| **COILS.** | |
| Splitdorf T S type | $10.00 |
| Splitdorf box type | 6.00 |
| Bosch type A | 12.00 |
| Remy box coils | 6.00 |
| Remy type LC and LE | 8.00 |
| Briggs box coils | 6.00 |
| **PREST-O-LITE TANKS.** | |
| Model B., fully charged | $8.00 |
| Model E., fully charged | 7.00 |

We REPAIR any make magneto, coil, lighting generator or starter and give 24 hour service. Member Detroit Automobile Trade Association.

**Detroit Magneto Exchange**
**192 Grand River Ave, Detroit, Mich**

## Scored Cylinders

**Made Equal to New Without Reboring.** We will fill your scores with a nickel and silver composition, with our new process. No heating to warp cylinders. Same piston and rings used. Complete information free. Reshipped 24 hours after received. We also sell the outfit to garages. Experience not necessary.

**NEW CHEMICAL PROCESS CO.**
**6 W. Ross St. Wilkes-Barre, Pa.**

## GEARS

**FOR TRANSMISSIONS AND DIFFERENTIALS**

**Write our Sales Department About Your Requirements.**

**SERVICE GEAR & MACHINE CO.**
**Reading Pennsylvania**

## SAVE 50% ON PARTS

Wheels, Axles, Gears, Bearings, Cylinders, Pistons, Crankshafts, Camshafts, Crank Cases, Transmissions, Hubs, etc., for E. M. F. 30, Maxwells Q, F, K, G, Overland 38, 42, Reo 1910, Empire 20, Buicks 10, 17, 19, Oakland 1910, Cadillac 1909-12, Mitchell 1907-12, Flanders 20, Warren 30. Ask us about any part for any Standard Make or Orphan Car. Prompt service. Money refunded if not satisfied. AUTO PARTS CO., 4100 Olive St., St. Louis, Mo.

## We CONTROL The OIL

No carbon, more power, less fuel. Motor runs like new all the time. No mystery, plain facts, results guaranteed. Write for booklet. Automobile Accessories Co., 816 W. North Ave., Baltimore, Md., or Auto Appliance Co., 301 W. 55th St., New York.

## *LEAKY RADIATORS*

**QUICKLY AND PERMANENTLY REPAIRED WITH**

**"DIAMOND RADIATOR CEMENT."**

Retails, 35c. Wholesales, 15c in dozen lots. Special guaranty price.

**DIAMOND AUTO SPECIALTY CO.,**
**4-8 Lawn St., Rochester, N. Y.**

## FREE

Get a copy of this big accessory Catalog. Every hardware merchant who sells auto supplies ought to see this book. Made for the auto supply dealer who wants to make more money selling supplies. Your copy is waiting. A request on your letter head will bring a book by return mail. Write today.

**CATALOG PRINTING & PUB. CO.**
**162A Lafayette Street, New York City.**

**"DIAMOND"**
**RADIATOR CEMENT**

Saves costly Radiator Repairs. Retails 35c, wholesales 15c in dozen lots. Special quantity price.

**DIAMOND AUTO SPECIALTY CO.,**
**4-8 Lawn St., Rochester, N. Y.**

## INDEX TO ADVERTISERS

Page
A. B. C. Starter Co............Cover
Adamson Mfg. Co................. 2
Advance Auto Accessories Corp.... 1
Aerofram Co., The.................56
American Electric Air Pump Co....60
American Motors Parts Co.........50
Apex Mfg. Co.....................68
Apperson Bros. Automobile Co......64
Automobile Accessories Co.........50
Auto Parts Co.....................50

Bearings Service Co...............65
Bowser & Co., Inc., S. F...........65
Brunner Mfg. Co.................. 9
Bunting Brass and Bronze Co......62

Catalog Printing and Pub. Co......50
Champion Ignition Co............. 8
Chicago Pneumatic Tool Co.......B
Chicago Tubing and Braiding Co...62
Commercial Truckmobile Co.......C
Cutter, Geo. A.....................58

Detroit Battery Co.................68
Detroit Magneto Exchange.........50
Detroit Piston Ring Co............68
Detroit Truck Co..................68
Diamond Auto Specialty Co........50
Dixon Crucible Co., Jos...........64
Dow Wire and Iron Works.........64
Dyer Co., G. H....................A

Faw, Inc., J. H....................63
Fisk Rubber Co....................49
Fitzgerald Mfg. Co................ 7

Garford Motor Truck Co...........62
Gardner Governor Co..............68
Gibson-Hollister Mfg. Co...........62
Goodell-Pratt Co...................67
Greb Co., The.....................60
Greenfield Tap and Die Corp......66

Hartford Mach. Screw Co.......... 3
Harton & Co., Thos. J., Inc........56
Harvey Spring Co..................61
Haywood Tire and Equipment Co.. 6
Hess-Bright Mfg. Co...............66

Indian Refining Co.................56
International Metal Polish Co......56

Jandorf Auto Co...................51
Jenkins Vulcan Spring Co..........65
Johnson Gas Appliance Co.........60

K & W Rubber Co..................11

Mabey Electric and Mfg. Co.......63
Manufacturers Engine Co.........65
Martin Mfg. Co., The.............61

**Ford Size Tires**
New 30x3½ Non-Skid. (Unguaranteed)
**$7.50**
**Jandorf Automobile Co.**
1763 Broadway, New York

**PLATINUM WANTED!**
Send us whatever Scrap Platinum you have on hand. We will pay the highest market prices for it.
**Paul G. Niehoff & Co. Inc.**
METALLURGICAL LABORATORIES.
CHICAGO, ILL., U. S. A.

**UNIVERSAL SOLDER CEMENT**

**Requires no heat or acid.** Absolutely guaranteed to do the work. No repair shop can afford to be without it. Will instantly close up leaks in radiators, water pipes, etc. Will save its cost every day. If your dealer cannot supply you, send us **25c for sample tube.**

UNIVERSAL SOLDER CO.,
66 Fort St., East, Detroit, Mich.

***Do You Want Foreign Business?***

The Motor Vehicle market is open to all American producers of cars, trucks, parts, fittings, supplies, accessories, mechanical and electrical equipment and tools.

We have the only direct means through which to reach this market. Every manufacturer has the means.

FOR FOREIGN BUSINESS ACT TODAY.

**Automobile Journal Pub. Co.** **Times Building, Pawtucket, R. I.**

## INDEX TO ADVERTISERS

(Continued)

Page
Maxfer Truck and Tractor Co..... 5
Monarch Governor Co.............52
Mossberg Co., Frank...........Cover
Motor Specialties Co..............57
Mueller & Co., R. S...............66

National Cash Register Co.........53
New Chemical Process Co..........50
New Departure Mfg. Co............67
New Era Spring and Specialty Co..58
Niehoff & Co., Inc., Paul G.........58
Norma Co. of America.............67

Pierce Governor Co................61
Pillsbury Mfg. Co..................59
Poughkeepsie Utilities Corp.......57
Prest-O-Lite Co., Inc............4-67
Puritan Machine Co...............50

Page
Ross-Gould List and Letter Co.....62

Scaife, Wm. B. & Sons Co.........67
Schrader's Son, Inc., A............60
Service Gear and Machine Co......50
Shotwell Pump and Tank Co......59
Standard Woven Fabric Co....Cover
Starrett Co., L. S.................12
Stevens & Co.......................61
Stockbridge Body Co..............55
Sullivan Motor Car Co.............62
Swedish Crucible Steel Co.........63

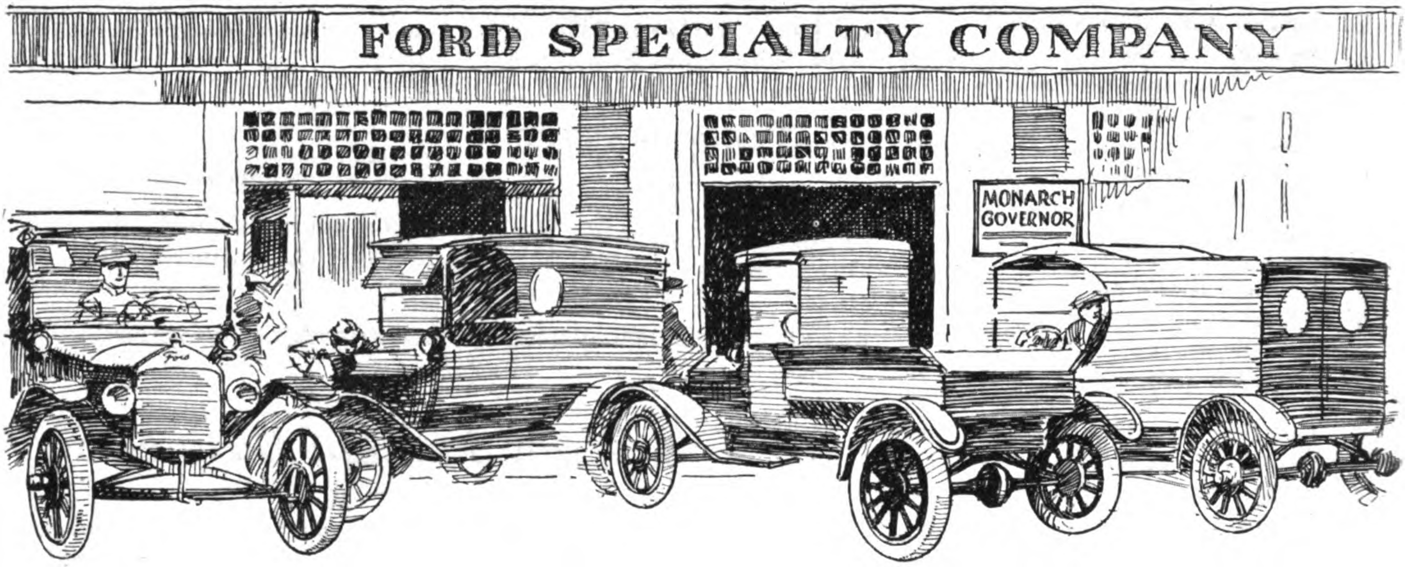
Ton-A-Ford Truck Co..............66

United Engine & Mfg. Co..........68
Universal Solder Co...............51

Vanderpool Co.....................68

Walden-Worcester, Inc.........Cover
Weston Electrical Instrument Co..65
Whittier Co........................D
Williams Foundry and Machine Co..66

**"I predict that in six months' time hardly a Ford will be put into delivery work, truck work or tractor work without a Monarch Governor—and hundreds of thousands are needed on present cars."**
—*J. W. Anderson.*



# You can sell a Monarch Governor for every Ford Commercial Car in your Territory

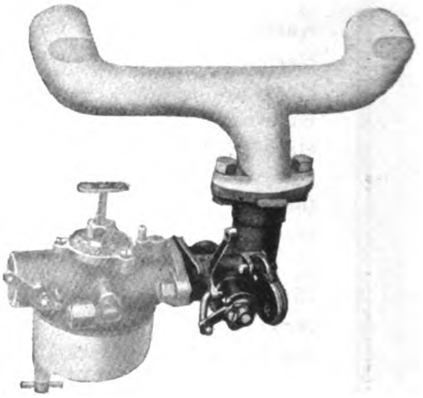
Strong statement—but it's true. You know excessive speed causes more Ford troubles than everything else put together. If you've sold Fords for delivery service, or Ford ton-attachments, you've probably prayed for some device that would keep irresponsible drivers from reckless racing. Owners feel the same way.

**$25** **MONARCH**
**FOR FORD CARS**
**GOVERNOR** **$25**

The Monarch Governor solves the big problem of excessive speeding. It was created in response to a country-wide demand, and it is the only speed-regulating device that will work on the Ford motor.

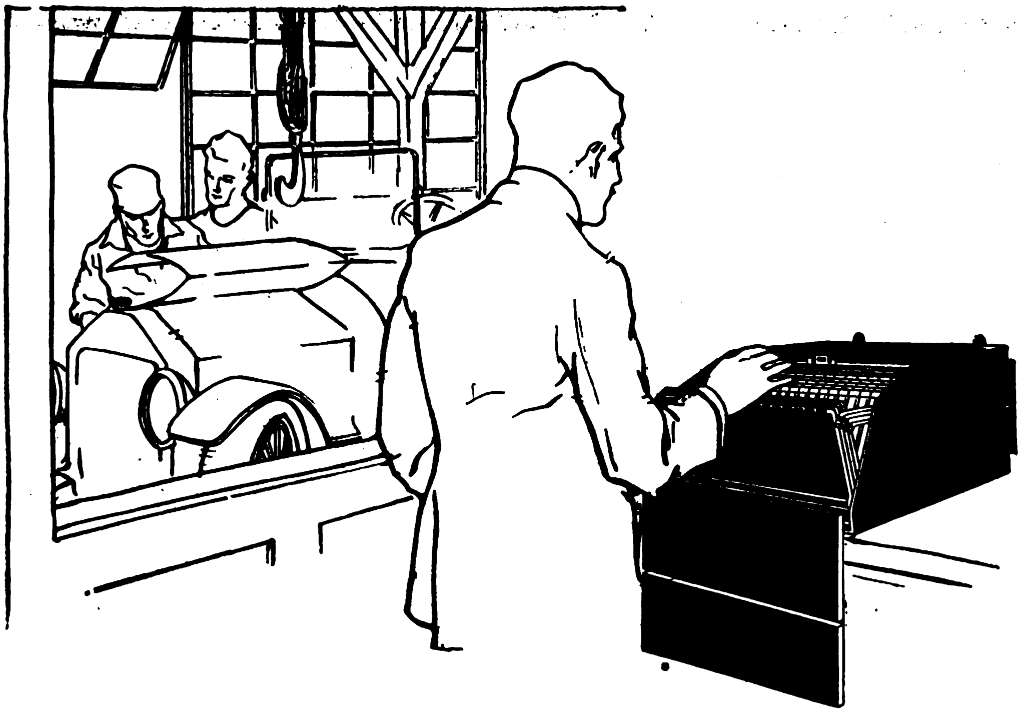
The large number of enthusiastic users proves Monitor practicability. Entire fleets of Ford commercial cars are being equipped with Monarch Governors. Sales come easily—Ford users have always wanted just such a device.

Our proposition to dealers is liberal. We'll work with you in developing prospects—we only ask that you work with us in closing them. National advertising is convincing thousands of prospects and we say to you, "Get in line at once for your share of this enormous business." The retail price of $25 is saved to the owner many times a year—and he realizes it. Write today and we'll get full details right back to you—we want to handle Monarch sales through you.



**MONARCH GOVERNOR COMPANY, 524 Bethune Ave., West, DETROIT, MICH.**

## Limits *the* Speed *and the* Expense



## A simple, complete system for keeping customers' accounts

# *The National Cash Register Credit File*

Cuts out all bookkeeping—avoids all errors. Saves time—saves effort—saves money.

No ledger—no more forgotten charges. Keeps every customer's account balanced to the minute and ready for immediate settlement. Gives an accurate statement any time one is wanted.

Simple and complete. Easy to operate. The ideal credit file system for automobile dealers and garage men.

*Do not waste time, effort and patience doing the work a machine can do for you. Write to us for literature on the Credit File.*

**Address Department 36**

**The National Cash Register Co., Dayton, Ohio**

**(When Writing to Advertisers, Please Mention the Accessory and Garage Journal.)**

# GIVE DEALERS A FIGHTING CHANCE

WHEN individuals, associations or publications advocate fixing prices for used pleasure cars throughout the country, they are advocating what will unquestionably destroy the business of the average dealer.

Such policy will greatly retard the sale of new cars and stifle the whole industry.

*For Effect of Price Fixing, the Conditions That Now Obtain and What Must Result,*

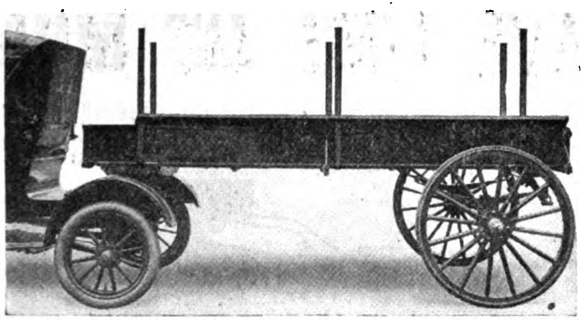
**READ**

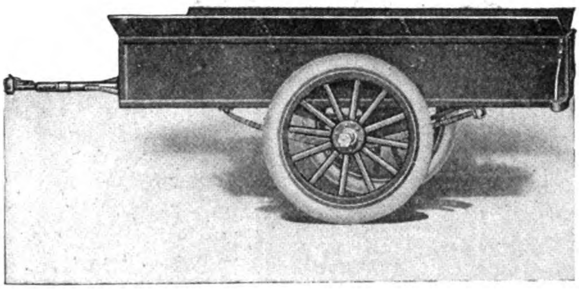
**THE AUTOMOBILE JOURNAL**

**JULY 10 ISSUE**

**ACCESSORY AND GARAGE JOURNAL**

**JULY ISSUE**





# Haul a 3000-lb. Load With Your Ford Car

A Ford runabout equipped with a Rocking Fifth Wheel, will have light truck capacity when used with STOCKBRIDGE 2000 or 3000 pound semi-trailers, and by uncoupling the body, which can be done in a very few minutes, the machine has all the utility of the pleasure car.

**STOCKBRIDGE Semi-Trailers** are the most practical equipment built. They are designed for truck service. They are operated with Ford economy. They can be coupled or uncoupled by any driver without help. The Rocking Fifth Wheel is easily removed. No time is lost. Simply remove six bolts. The owner has a car or a unit with truck capacity and makes no sacrifice of the qualities of either type of vehicle.

The car and semi-trailer can make 20 miles an hour on good roads and can climb any travelled grade.

**STOCKBRIDGE Semi-Trailers** are constructed for truck service. The bodies are express type, with flareboards or flareboards and stakes. The brief specifications are:

| | 2000 Pounds | 3000 Pounds |
|---|---|---|
| AXLE | 1 5-8 in. square, Timken roller bearings. | |
| SPRINGS | Platform type, 1 3-4 in. wide | Platform type, 2 in. wide |
| WHEELS | 46 in. outside diameter, artillery type hubs, 1 5-8 in. spokes | |
| TIRES | Solid rubber, 1 3-4 in. flat top. side wire | 2 in. flat top. side wire |
| EQUIPMENT | Complete Rocking Fifth Wheel ready for attaching | |
| PRICES | $195, f. o. b. Springfield, Mass. | $225 f. o. b. Springfield, Mass. |

**SPRINGFIELD TRAILER,** 800 pounds capacity, express body, semi-elliptic springs, 1 1-4 in. axle, ball bearings, 12-spoke automobile wheels, 30x3 in. pneumatic tires, price **$105,** f. o. b. Springfield.

**STOCKBRIDGE BODY COMPANY,** 130-6 UNION STREET
SPRINGFIELD, MASSACHUSETTS

# UNIVERSAL TRUCK ACCOUNTING SYSTEM

**(Copyright, May, 1914, by The Automobile Journal Publishing Company.)**
**All Rights of Use or Publication in Any Form Reserved.**

It affords every detail of time and work of any number of machines, the labor, operating cost, revenue and earnings, with comparisons for any period, in one record book and day card for each truck.

The simplest and most comprehensive record ever conceived, adaptable for use with any method of house bookkeeping or independently, that can be made to serve as part of any method of accountancy.

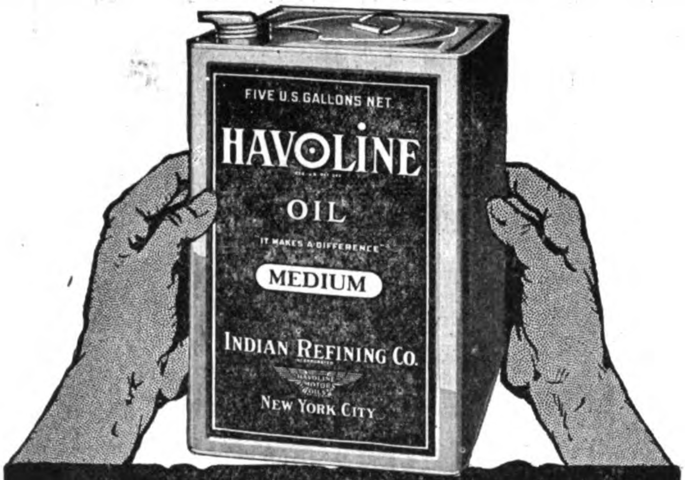
The most intensely practical system of accounting ever devised, that can be maintained by a girl clerk and which has no limitations.

When you know the exact cost of truck operation and what is earned through the use of any vehicle, you have data of the greatest practical value.

Detailed information at request. When writing state number of trucks in use.

## *The Motor Truck*

*TIMES BUILDING* *PAWTUCKET, R. I.*


FIVE U.S. GALLONS NET
HAVOLINE
OIL
IT MAKES A DIFFERENCE
MEDIUM
INDIAN REFINING CO.
NEW YORK CITY

**Up Go Havoline Sales**

Higher every month soar the totals of Havoline Oil sales.

Are you getting your share of dealer profits created by the unusual appeal of the 1917 Havoline advertising drive? In order to cash in to the utmost, you should keep well-stocked in sealed cans of Havoline Oil.

Havoline advertising, coupled with the square, consistent principles of Havoline merchandising, is the dealer's guarantee of steady sales.

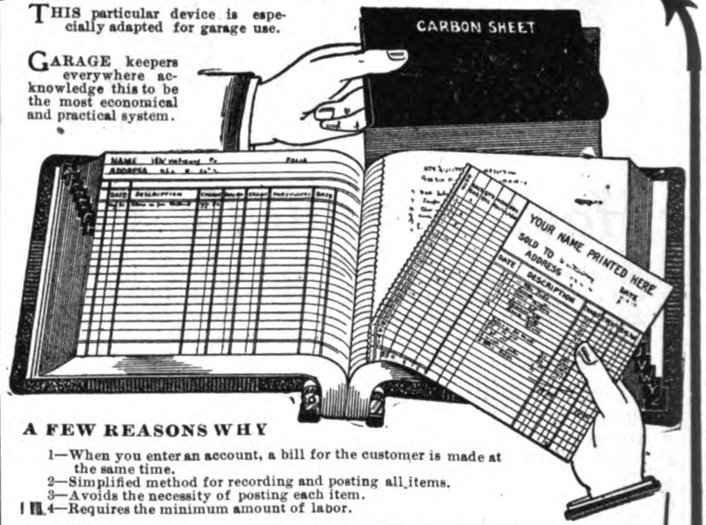
**Indian Refining Company,** New York
Incorporated
*Producers and Refiners of Petroleum*

**SAVE TIME AND MONEY**

**Our SPECIAL GARAGE Bookkeeping Plan Gives You the HIGHEST Possible EFFICIENCY**

THIS particular device is especially adapted for garage use.

GARAGE keepers everywhere acknowledge this to be the most economical and practical system.


CARBON SHEET
NAME
ADDRESS
YOUR NAME PRINTED HERE
SOLD TO
ADDRESS
DATE
DESCRIPTION

**A FEW REASONS WHY**

1—When you enter an account, a bill for the customer is made at the same time.
2—Simplified method for recording and posting all items.
3—Avoids the necessity of posting each item.
4—Requires the minimum amount of labor.

**This page is the customer's bill; the one underneath is your copy**

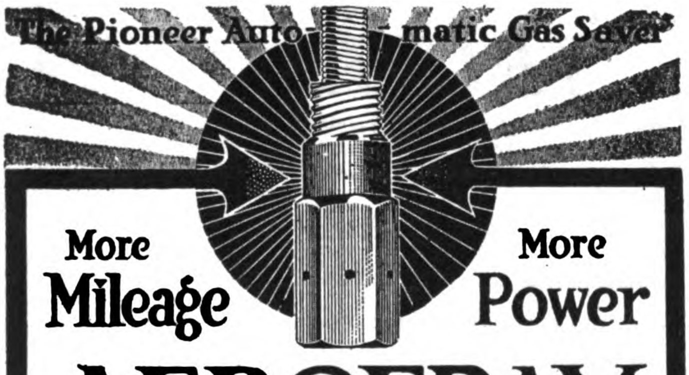
☞ *Harton's Garage and Accounting Record is another new labor saving device we make. Ask about it.* ☜

**SEND FOR DESCRIPTIVE FOLDER AND FULL PARTICULARS**

*Let Our Service Department Solve Your Bookkeeping Problem. We Gladly Give Advice Free.*

**THOMAS J. HARTON & CO., Inc.** Church & Worth Sts. NEW YORK
*Loose Leaf Specialists*

The Pioneer Auto-matic Gas Saver



More Mileage

More Power

**AEROFRAM**

**Gas Saver**

**The Simplest and Most Efficient of All Gas-Saving Devices—Effects a Notable Improvement in Engine Performance—Anybody Can Install It in Ten Minutes—For All Cars.**

***Absolutely Automatic—Nothing to Adjust***

**Dealers:** The Aerofram actually does the work that more expensive gas-savers claim to do. When you offer it to your customer you do so with the certainty that he cannot duplicate its efficiency with any other device at ten times the price. It will positively add two to six miles per gallon—in many cases more. Hundreds of users have testified to this. Write for details. Liberal selling terms.

*Price in Canada $1.50*

$1 **The Aerofram Co.** $1
107 Massachusetts Avenue. Boston, Mass.

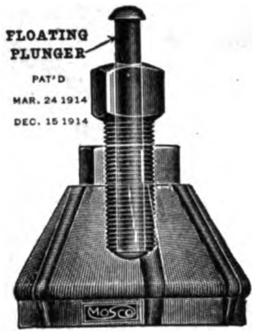
ONE GALLON
BLUE RIBBON
TRADE MARK
REGISTERED U.S. PAT OFFICE
GREASELESS CREAM
AUTOMOBILE
BODY GLOSS
DIRECTIONS
INDIANAPOLIS, IND.

**Keeps the Body of Your Car *Shining* Like a Mirror**

No Grease to Catch Dust—Does Not Coat the Finish—Best Furniture Polish Made—Use With SPRAY if Desired.

**International Metal Polish Co.**

MOSCO



## FLOATING PLUNGER WHEEL PULLER

**Makes a "Frozen" or "Stuck" wheel come off easily. Strike the plunger, turn the screw, strike again and the wheel comes off without injury to hub-threads, spokes or axle.**

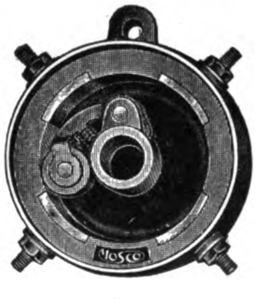
### Made for the following cars:

- Abbott
- Apperson
- Auburn
- Buick
- Case
- Chalmers
- Chandler
- Chevrolet
- Daniels
- Davis
- Dort
- Empire
- Ford
- Franklin
- Hudson
- Interstate
- Jeffery
- Jordan
- Lexington
- Liberty
- Maxwell
- Milburn Electric
- Mitchell
- Moline Knight
- Oakland
- Oldsmobile
- Overland
- Paige
- Peerless
- Pierce Arrow
- Premier
- Reo
- Saxon
- Velie
- Vim
- Westcott

***Your jobber has them in stock.***
***New models continually being added.***
***List of models and prices on application.***

MOSCO

## Timer For Ford Car



**Extra heavy pressed steel shell, aluminum finish. Insulating ring of gray bone fibre.**
**Terminals insulated all the way through. One-hand, self-closing oiler. Pressed steel arm and compression spring on brush assembly. Brush assembly sold separately. Interesting prices.**

***MOTOR SPECIALTIES CO.***
***MANUFACTURERS***
***WALTHAM MASS.***

---

## DO YOU HEAR

the UTILITY KID signaling you to go ahead and get

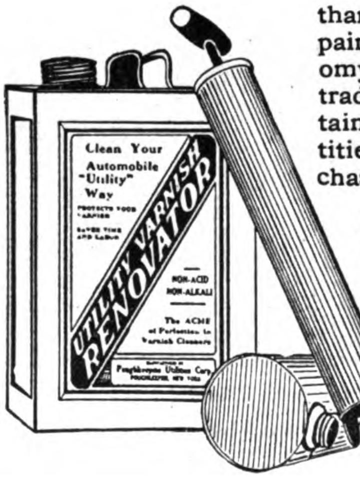
## UTILITY VARNISH RENOVATOR

***It is Incomparable in Its Results—Complete Satisfaction for the Users and Big Business for the Dealer***

**It cleans and polishes the car body, maintains the finish at factory appearance; restores the old car to practically new in sightliness, and protects the varnish so that it is not influenced by water, dust or climatic changes; it brightens leather to its original condition and makes it soft and pliable; it insures against water-breaks, blistering and checking, and dissolves ROAD OIL and TAR compounds.**

**IT IS GUARANTEED NOT TO INJURE ANY VARNISH FINISH ON WHICH IT IS USED, AND TWICE THE AREA CAN BE COVERED THAN WITH ANY OTHER COMPOUND.**

**Garages and Repairmen use it constantly on all cars. It eliminates the need of washing cars with soap and water. It saves time and labor and will more than save its cost in painting and economy. It is sold in trade marked containers and in quantities to suit purchasers.**


Clean Your Automobile "Utility" Way
UTILITY VARNISH RENOVATOR
NON-ACID
NON-ALKALI
The ACME of Perfection in Varnish Cleaners
Poughkeepsie Utilities Corp

**It is unequalled as a furniture polish.**

***List Prices:***

| | |
|---|---|
| **4 ounce** | **25c** |
| **12 ounce** | **50c** |
| **Quarts** | **$1.00** |
| **Gallons** | **3.00** |
| **Sprayer** | **25c** |

JOBBERS and DEALERS: We want to tell you of the best sales proposition of the year. We offer a big profit-making contract that means more business for business men. Write for it.

**Poughkeepsie Utilities Corp.**
**46 WINNIKEE AVENUE,**
**Poughkeepsie New York**

BAY STATE AUTOKIT
DEALERS IN AUTO ACCESSORIES
AUTO REPAIRING

# BAY STATE AUTOKIT

## THEY ALL SAY THE SAME

## *THE BEST TOOLS ARE CHEAPEST*

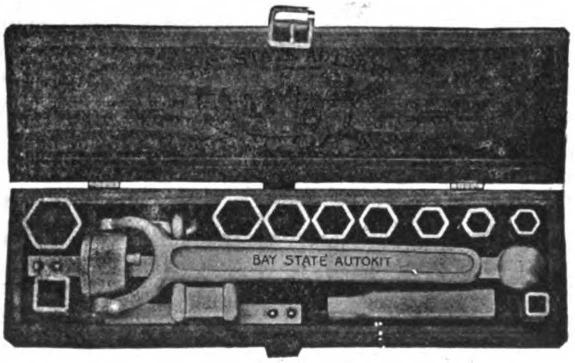
BECAUSE they are designed for special work, are made of highest grade materials, will endure for years of service, and economize time and labor. They are guaranteed and they give constant satisfaction.

## BAY STATE Autokit Wrench Sets

are known to many thousands of motorists who have been taught by experience the value of the right tools for motor car work of every kind.

Each set is a combination of selected tools, including sockets, shanks and ratchet handles, with which any work on any part of a car can be done quickly, conveniently and perfectly.

They are equally desirable for work on the road or in the garage or shop.



**Bay State Autokit No. 2**

**Each Set is a Special Combination Adapted for Automobile Work**

| | |
|---|---|
| **Set No. 1, 31 Sockets** | **$10.00** |
| **Set No. 2, 12 Sockets** | **7.50** |
| **Set No. 3, 11 Sockets (Ford Outfit)** | **4.00** |

*Every set is absolutely guaranteed to the buyer.*

***JOBBERS AND DEALERS: Send for new trade quotations and literature describing these sets.***

**GEORGE A. CUTTER**
**Sales Agent**
**Taunton Massachusetts**

---

## Stop the Spring Breakage

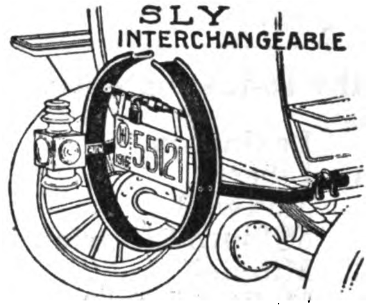
NEW ERA BETTER SPRINGS

It's poor policy to risk repeating the annoyance of a broken or weak spring—and the delay—by saving only a very little in buying or selling a **cheaper** spring instead of a **"New Era BETTER Spring."**

Don't replace a broken spring with one no better.

Wise dealers sell only the best.

**New Era BETTER Springs** are the oldest and largest used line for replacement—at same price as from car factories. Made for all cars, **guaranteed** one year against breakage or sagging, graphited between leaves for two years' lubrication.



## SLY Interchangeable and Cradle Type TIRE HOLDERS

Interchangeables quickly adjustable for all Ford and Chevrolet tires and demountable rims. Combines place for lamp, number plate lock and tire, holding by expansion grip on inside of tire. No chafing. Clamps to Ford or Chevrolet frame without drilling or bolting. At all jobbers, or write

**New Era Spring & Specialty Co.**
**865-A Woodward Ave. Detroit, Mich.**

---

PAUL G. NIEHOFF & CO.
METALLURGICAL LABORATORIES
NORTH CLARK STREET AT KINZIE CHICAGO, ILLINOIS

## Have You received a copy ?

Our catalog contains more than 500 staple repair items, such as Magneto Repair Parts, Platinum Contact Screws, Breaker Arms, Brushes, Distributor Parts and Coil Parts, also Platinum Contacts for Magneto Repair Work and Tungsten Contacts for Distributors and Coils. These items are purchased by every car owner and you should be able to supply them.

There are also listings and illustrations on Starter and Generator Brushes, giving you the name of the car, year, model and brushes to be supplied. This is very valuable data which you should have on record.

This catalog also gives you information as to what systems are used on various makes of cars so as to enable you to intelligently serve your customers' needs. It will help you to build up a more permanent business.

We furnish a special "CASH REGISTER OF CONTACT PARTS" free with an assortment of parts.

This is a most complete and comprehensive catalog published on Repair Parts and Contacts. Our jobbers can serve you.

In buying request "NIEHOFF REPAIR PARTS." THEY ARE GUARANTEED.

**PAUL G. NIEHOFF & CO., Inc., Clark St. at Kinzie, Chicago, Ill.**

TRADE MARK AND NAME REGISTERED BY PAUL G. NIEHOFF & CO. INC. CHICAGO

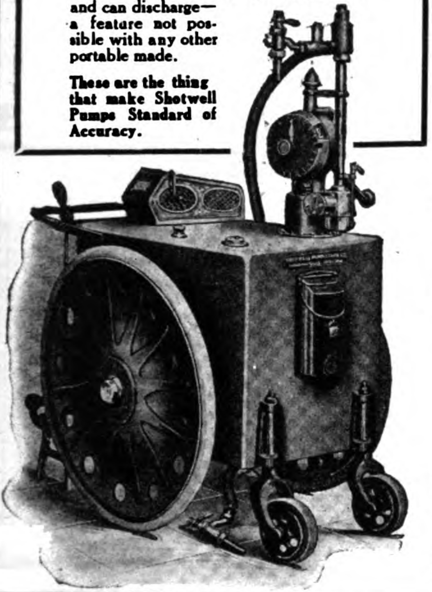
*They'll soon find the way to your place if you're equipped with the*

**The Scout**

**SHOTWELL Anti-Syphoning Portable Filling Station**

Here's the outfit that has a patented anti-syphoning hose draining valve which guarantees against syphoning by the manipulation of the hose and assures constant measurement for both hose and can discharge—a feature not possible with any other portable made.

**These are the thing that make Shotwell Pumps Standard of Accuracy.**



**Shotwell** NEVER MORE NEVER LESS STANDARD OF ACCURACY

## Gasoline and Oil Storage System

Makes friends because it means clean, filtered gasoline and honest measure, always; never more, never less. Makes profits for you because it attracts customers, avoids waste, is 50% faster than the old style systems; saves you time and money.

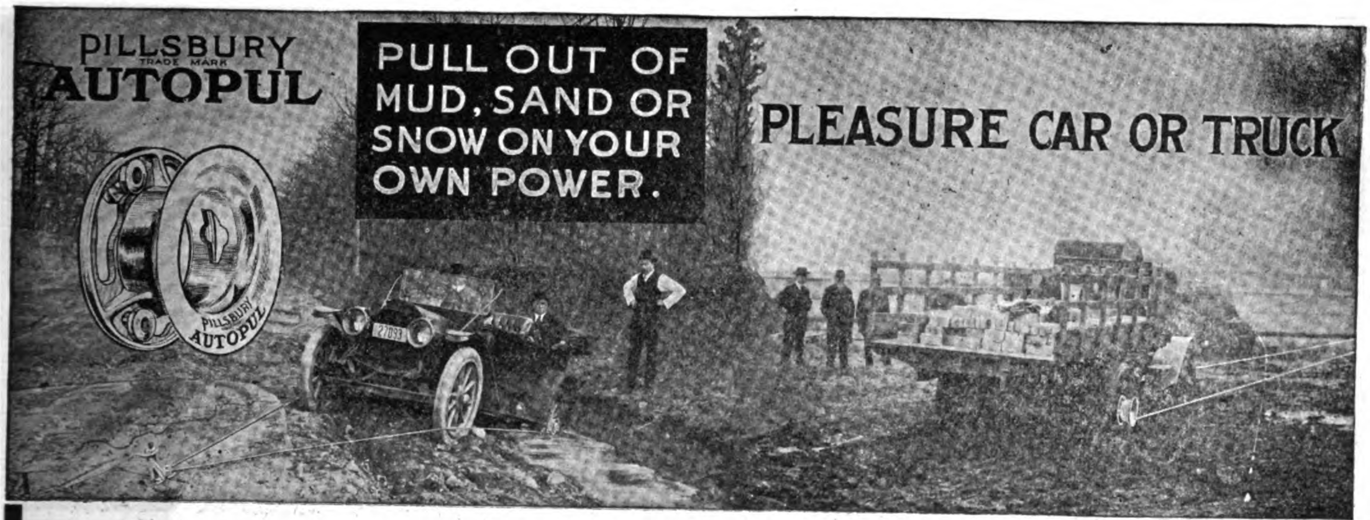
A complete line of measuring pumps and storage tanks for handling gasoline and lubricating oils, all of Shotwell quality; standard of Accuracy.

*Let us show you the difference; we can furnish the exact equipment to fit your needs.*

**Shotwell Pump and Tank Company**
27 North Alabama Street
INDIANAPOLIS INDIANA

GASOLINE
SCOUT
Filtered Gasoline

---



## *All Highways are Passable—With a* PILLSBURY AUTOPUL

An equipment, either permanent or quickly fitted to any car or truck, with which a ditched or bogged or tractionless vehicle can be drawn to a solid surface.
The outfit can be carried constantly, requires but small space and is very light. Machines can be drawn forward or back as is necessary by their own power.

*LIST PRICE, COMPLETE FITTINGS*

| | |
|---|---|
| Automobile Size, Japanned | $8 |
| Automobile Size, Nickeled | $13 |
| Truck Size, Japanned | $8 to $35 |

Indispensable for any truck, an ideal touring equipment, PILLSBURY AUTOPUL is a practical utility and an economy.
It consists of two winding drums, two special cable hooks and locking bolts and nuts. Stakes and cable furnished as extras, the cable or rope in lengths to meet any requirement.

**PILLSBURY HUBPUL** For Ford and model 490 Chevrolet cars—a combination Hup-Cap, Wheel Puller and Auto Capstan, consisting of two hub drums, two spoke hooks and wheel puller cap screw.

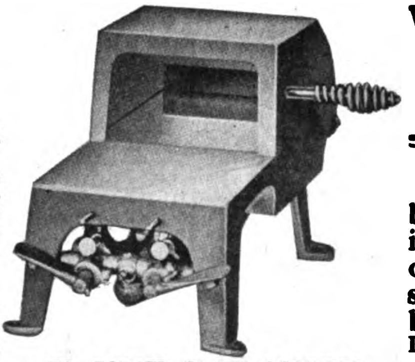
| | |
|---|---|
| Complete Set, Japanned | $4 |
| Complete Set, Nickeled | $6 |

*All quotations f. o. b. Minneapolis, Minn.*

*DEALERS AND JOBBERS: We have a big sales proposition for you. Write for it today.*

**PILLSBURY MANUFACTURING COMPANY, Minneapolis, Minn.**

# Do Repair Jobs Quicker With a Johnson Gas Furnace



NO FORCED BLAST REQUIRED

**The Johnson No. 101** Bench Furnace **is the handiest gas appliance** for heating **soldering coppers, hatchet** irons, for **case-hardening, heating for** tempering or **annealing.**

**It is equipped with two** powerful atmo**spheric burners that obtain** instantly a heat **of 1600 to 1800 degrees F,** in the heating **chamber.**

**Takes the place of an expensive blast furnace. Perfect combustion is insured, regardless of the pressure or quality of the gas. There's no soot or dirt. No danger of decarbonization because of neutral flame. Lights instantly from pilot. Uses either manufactured or natural gas.**

**Unequalled for manufacturers as well as garages and repair shops. If your jobber cannot supply you, write us direct for No. 101 Johnson Furnace, or free illustrated literature.**

**Johnson Gas Appliance Co., - - Cedar Rapids, Iowa**

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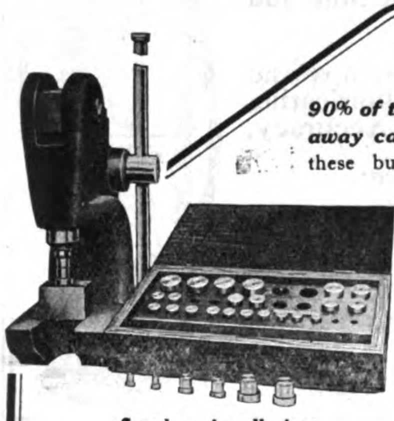
# Don't Junk Your Old Bushings!



Swedges in all sizes
from 7-16" to 1 3-16"

*90% of the Bushings that have always been thrown away can be made better than when new!* After these bushings have been put through one of our Bushing Presses, the metal is closer-grained and the bushing fits tighter. *One fifth of the expense and labor in overhauling a car goes into the bushings.* With our Bushing Press you can take a set of six connecting rods, and in less than half an hour swedge and ream them to a perfect fit. These are better than new bushings, which would have cost at least ten dollars—pretty good pay for a half hour's work! The Beach Bushing Press saves all the cost of new stock; no delay from sending to the factory; no necessity to carry in stock a dozen different size bars of cored bronze. *Write us today!*

## BEACH PROCESS BUSHING PRESS

**THE GREB COMPANY, 202 State Street, BOSTON, MASS.**

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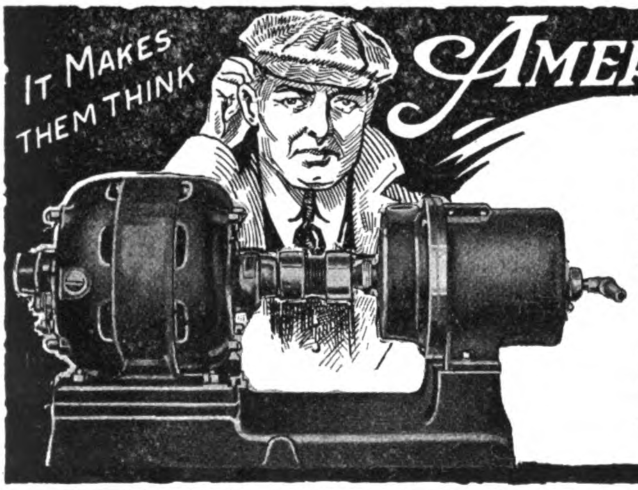
# American Electric Air Pump



EMPLOYING the **ROTARY** principle, the American Electric has these distinct advantages: It is the most compact, simple, durable, economical and efficient air pump made. It can be placed anywhere. Supplies air direct to the tires or can be coupled with a storage tank. Driven by direct or alternating current. Automatic lubrication. Dust and dirt proof. No packing used. Fully guaranteed.

***JOBBERS and DEALERS**—We are offering special inducements to the trade. You can sell the American Electric and can swing the pump business in your territory. A proposition that once sold stays sold.*

**AMERICAN ELECTRIC AIR PUMP CO.,** 222 Penn Ave. PITTSBURGH, PA.

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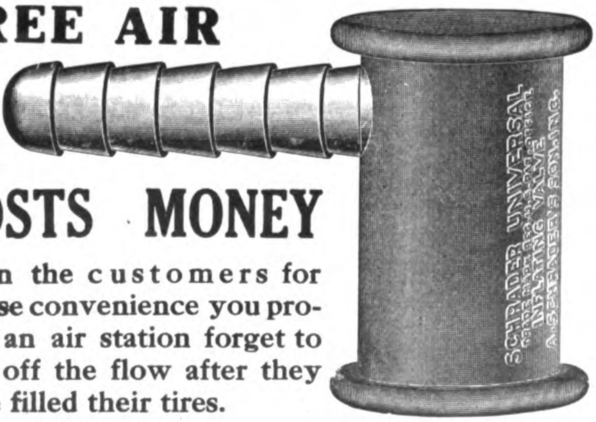
# FREE AIR COSTS MONEY



**when** the customers for **whose** convenience you pro**vide** an air station forget to **turn** off the flow after they **have** filled their tires.

**Guard against this waste by attaching a**

## Schrader Automatic Inflating Valve

**to your air hose.**

**Thanks to this appliance your bottled air locks itself into the tank the minute it is taken off the tire-valve. You turn on the air by pressing the nozzle of the inflating valve against the tire-valve and you turn it off by removing the device from the tire-valve.**
**Made to fit any diameter of hose from 1-4 in. to 5-8 in.**

**PRICE ONE DOLLAR**
in U. S. A.

*Manufactured by*

**A. SCHRADER'S SON, Inc.**
800 Atlantic Avenue, Brooklyn, N. Y.

***Schrader products were awarded a Grand Prize and two Gold Medals at the Panama Pacific International Exposition. "There's a reason."***

PIERCE Governors

For Ford Cars

The owner's hand controls the speed of every PIERCE equipped Ford truck or delivery wagon, no matter when or where it is driven. It makes no difference who the driver is, he cannot exceed the speed for which the governor is set—and the owner decides the speed.

A PIERCE GOVERNOR don't cripple the motor when heavy loads, steep grades, or slippery traction demand extreme power. It is the only governor made that will control the speed of a Ford truck, and leave the motor entirely free in reverse and low gears.

Stop fast driving and you eliminate 75% of all collisions and accidents—reduce repair costs one half—and make tires wear longer. PIERCE GOVERNORS pay for themselves a dozen times a year.

*A live proposition for live dealers*

PIERCE GOVERNOR COMPANY
*World's Largest Governor Builders.*
ANDERSON, INDIANA, U.S.A.

Sell *Harvey* RACINE Springs

—and Gain Good Will

The **good will** customer is the greatest asset you can have. Every time you sell a Harvey Spring you make a life-time customer—you gain his good will because you *satisfy* him. Our guarantee—on every spring—protects both you and your customer.

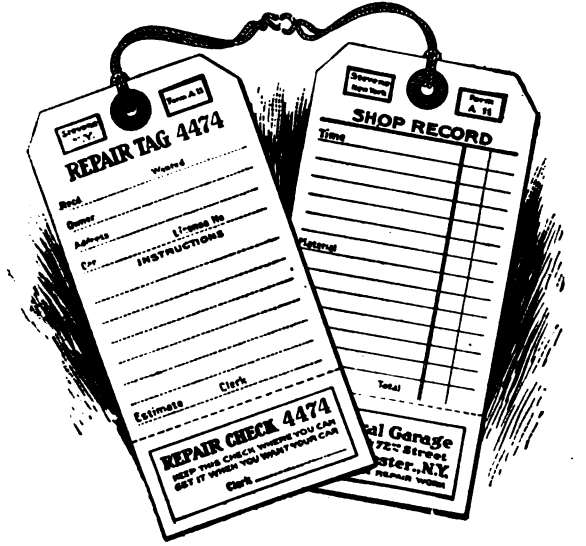
Harvey Springs Do Not Break

They're guaranteed from end to end against *all* defects. Made in all sizes for over 600 of the leading makes and models of cars. Every Harvey Spring is an exact duplicate of the one it is intended to replace and fits with an accuracy that will surprise you.

FREE

The Harvey Spring Book shows sizes, weights, measurements, prices, etc. It enables you to tell at a glance just what spring you want and prevents mistakes in ordering replacements. Write for a copy and name of nearest Harvey jobber.

THE HARVEY SPRING CO.
851 17th Street RACINE, WIS.



AUTO REPAIR TAGS

A convenient simplified accounting system for the busy dealer and repairman.

Increases shop profits by gaining confidence of customers and eliminating errors.

Numbered serially with detachable check. Large size coated, colored stock. Printed on both sides with 12" strings. Ready for imprint.

Printed in large quantities we are able to give dealer advantage of low cost.

**Price per 1000 - $5.00**

**Stevens & Co., 375 Broadway N. Y. City**

FOR FORD OR CHEVROLET

**List Price, 75 Cents Each**

**An Ideal Equipment For Cars Without Door Pockets** that can be quickly installed and affords extreme convenience. Made of highest grade leather cloth, that will not crack or peel and has longer endurance than leather.

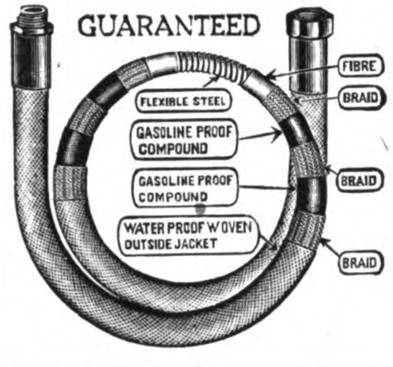
A fast selling profitable accessory. When ordering always state whether for Ford or Chevrolet.

Martin leather cloth specialties, the finest line made, includes Tire Covers, Radiator Robes, Tube Cases, Engine Robes, Robe Rail Bags, Water Buckets, Headlight Dimmers, Etc. Not equalled for quality, and sold for moderate prices.

*Write for Jobbers' and Dealers' Catalogue and Quotations*

**Martin Manufacturing Co.**
LANCASTER OHIO

## YOU WANT AND NEED EVERLASTING GASOLINE HOSE



**Gasoline dissolves rubber and the best rubber hose made will last but a short time. Results—leaks, waste and repairs.**

**Everlasting Hose is made with a steel core covered with two plys of a gasoline proof compound, covered with a waterproof jacket. It is oil and dirt proof.**

**It is more flexible than rubber hose, it cannot break or leak and is guaranteed for one year.**

**There is no rubber to dissolve, to clog the gasoline line or carburetor. In use will not scratch nor mar the finish of the car.**

**It is made to fit any pump or tank. Sold in standard lengths 8, 10, 12, or 15 feet, but supplied in any length with couplings attached.**

**LIST PRICES** } **¾" $1.00 a ft.—Coupling, hose or I. P. T. $1.50**
**1¼" $2.00 a ft.—Coupling, hose or I. P. T. $3.00**

***Anti-drip nozzles furnished when desired.***

**CHICAGO TUBING AND BRAIDING CO.**
**224 No. Clinton St. CHICAGO, ILL.**

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## Garford MOTOR TRUCKS

**Trucks of 1, 1½, 2, 3½, 5 and 6 ton capacity. 4½, 7 and 10 ton Tractors.**
**The Garford Road Builder.**

**THE GARFORD MOTOR TRUCK CO., Lima, Ohio.**

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## Bunting Bearing Bronze IN Cored Bars

**Bunting Bearing Metal is standard today with both Manufacturer and Repairman.**

**Is for sale by most any Jobber or can be purchased direct from us.**

**STOCK SIZES**

| PIECE NO. | Outside Diameter | Inside Diameter | Length | Approximate weight |
|---|---|---|---|---|
| A | 1 | ½ | 12 | 2 |
| B | 1¼ | ½ | 12 | 3½ |
| C | 1½ | ¾ | 12 | 5 |
| D | 1¾ | ¾ | 12 | 7 |
| E | 2 | 1 | 12 | 8½ |
| F | 2¼ | 1¼ | 12 | 10 |
| G | 2½ | 1½ | 12 | 11½ |
| H | 2¾ | 1¾ | 12 | 12¾ |
| I | 3 | 2 | 12 | 13¾ |
| J | 3¼ | 2¼ | 12 | 15½ |
| K | 2½ | 2½ | 12 | 17 |
| L | 4 | 3 | 12 | 21 |
| M | 4¼ | 3¼ | 12 | 20 |

**The Bunting Brass & Bronze Co.**
**727 Spencer Street Toledo, Ohio**

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### Do Business by Mail

It's profitable, with accurate lists of prospects. Our catalogue contains vital information on Mail Advertising. Also prices and quantity on 6,000 national mailing lists, 99% guaranteed. Such as:

War Material Mfrs.
Cheese Box Mfrs.
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Axle Grease Mfrs.
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Write for this valuable reference book. Also prices and samples of Fac-simile Letters.

*Have us write or revise your Sales Letters.*

Ross-Gould, 1015K Olive Street, St. Louis

**Ross-Gould Mailing Lists St. Louis**

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## JUMBO SPARK PLUGS

JUMBO
MOLITE
MADE IN U.S.A.

***List Price 50 Cents***

**PERFECT SERVICE GUARANTEED**

**For the life of the car.**
**Write for details of our sales proposition.**

**Gibson-Hollister Mfg. Co.**
**BOSTON, MASS.**

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## SELL SULLIVAN TRUCKS

One of the few staple and practical trucks on the market.

Our selling policy and proposition is the most liberal ever offered to the trade.

**One Model, 3,000 Lbs. Capacity**
**Chassis Price, $1,600**

***Write for complete details***

**SULLIVAN MOTOR CAR CO.**
**Rochester, New York**

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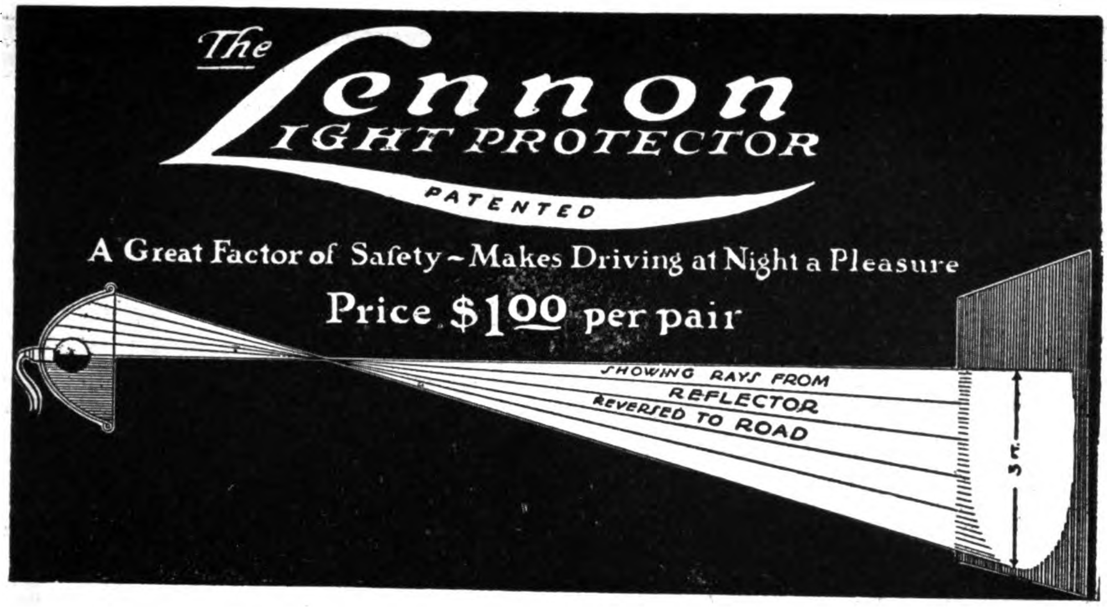
***THE ACCESSORY AND GARAGE JOURNAL***

***PUBLISHED MONTHLY***

**Times Building Pawtucket, R. I.**


The Lennon Light Protector
PATENTED
A Great Factor of Safety – Makes Driving at Night a Pleasure
Price $1.00 per pair
SHOWING RAYS FROM REFLECTOR REVERSED TO ROAD
3 ft.

The Lennon Light Protector is made in one piece, from high-grade spring brass, has our patented spring front that allows it to fit an under or oversize bulb without the slightest injury to the bulb; is heavily plated and polished inside and out, therefore it will not grow dull or tarnish as if made of white metal.

It is light in weight and simple in construction, and has no delicate springs or extra parts whatever to break or get out of order. It will last a lifetime, as it can easily be changed from one bulb to another.

Simple to put on, as it does not require the removal of bulb from headlights; just place eyelet part of Light Protector over point of bulb and press into position. Does not require any attention whatever once placed in position.

The Lennon Light Protector has been approved by town, city and state authorities, and should be used on every electrically lighted automobile.

Sole ownership of patents and all manufacturing and distributing rights are now the property of

41 Warren St., N. Y. City **J. H. FAW, Inc.,** Branch: Atlanta

*Our Literature on Request*

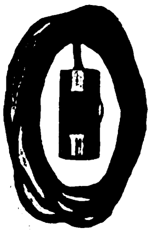
ELECTRIC GLUE POT

Mabey's Dry Heat Electric

**Glue Pot**

No flame; no soot or smoke. All danger of fire is eliminated

| Capacity | Price without cover |
|---|---|
| 1 qt. | $ 9.50 |
| 2 qts. | 11.00 |
| 3 qts. | 12.75 |
| 4 qts. | 15.75 |


**Century**
**Automobile Cigar Lighter, Complete $1.00 Each, F. O. B. Indianapolis.**

*DEALERS—Write For Prices.*

**MABEY'S ELECTRIC & MFG. CO.**

968 Ft. Wayne Avenue INDIANAPOLIS, IND.

**Trade Subscription Offer**

Including three motoring magazines—one gives over to the pleasure car field—another to commercial vehicles and the third to industrial interests. Each magazine distinct.

The lowest rate ever made for leading motoring papers. Write for details.

**ACCESSORY & GARAGE JOURNAL**

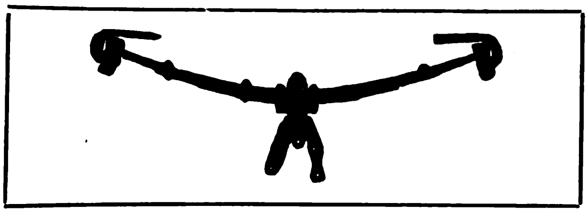
Times Building Pawtucket, R. I.

**Olson Units**

**For Fords**

***Revolutionize the Light Delivery Car Field***

Load carried directly on wheels where it belongs. The auxiliary springs prevent side sway and sagging.



| | |
|---|---|
| No. 1000, three-leaf, for 1000-pound load | $30.00 |
| No. 1250, four-leaf, for 1250-pound load | 32.50 |
| No. 1500, five-leaf, for 1500-pound load | 35.00 |
| No. 1750, seven-leaf, for 1750-pound load | 40.00 |

Why pay more when the Olson Unit and a Ford will do the work of a high price Light Delivery Car?

Big Proposition for Dealers.

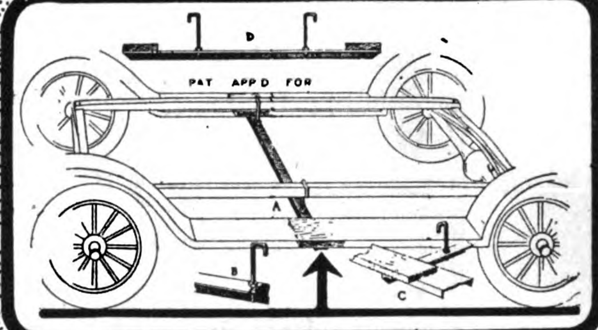
*Write for discounts and territory*

**SWEDISH CRUCIBLE STEEL CO.**

DETROIT MICHIGAN

# Dow Body Brace For Ford Cars

Here is one of the most practical and biggest selling accessories for Ford Cars ever offered the dealer. It reinforces the whole car, prevents uneven loading and breaking of springs, absorbs the shock of the road and makes the car ride like velvet. It stops that noise and rattle and supports both fenders and running boards. Ford owners buy them at sight.



*See How It Braces Body, Running Boards and Fenders*

## Big Seller for Dealers!

The Dow Body Brace for Ford Cars is made of strong angle steel, simple and substantial in construction, fits any Ford and can be attached to the chassis in five minutes. No adjustments—just fasten it to the chassis and tighten the bolts.

*Live dealers are selling them right and left. Send us your order today and get your share of the business. Better make your first order for at least 100.*

**Price to Ford Owner $3.00**
**Liberal Discount to Dealers**
**Stocked by Leading Jobbers**

**DOW WIRE AND IRON WORKS**
INCORPORATED
LOUISVILLE, KENTUCKY

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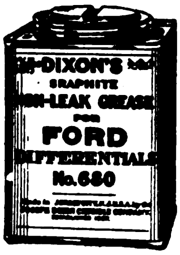

**DIXON'S**
Graphite
Automobile
**LUBRICANTS**

## Have You Ordered

A SUPPLY OF THE 2½ LB. PACKAGES OF

**DIXON'S**

**NON-LEAK**

**Grease No. 680**

Especially prepared for use in Ford differentials?

No. 680 contains just the proper amount of Dixon's selected flake graphite thoroughly mixed with a special adhesive lubricant. It does not work out of the axles on to the brake bands.

Ask for booklet 49-G and dealer's proposition.

Made in Jersey City, N. J., by the

**Joseph Dixon Crucible Company**

Established 1827

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A BIG CAR that saves tires and gas. This is the success of the Apperson—130-inch wheelbase—extremely light weight—48 to 56 H. P.

*Sixes and Eights*

**APPERSON BROTHERS AUTOMOBILE COMPANY, KOKOMO, INDIANA**

**APPERSON**

**Are You Losing This Chance?**

The Garage Man who can repair and adjust Electrical Equipment is getting the cream of the garage business. There is more money in electrical repairs than in any other department of the garage business. The demand is enormously increasing.

**Weston**

**Model 280**

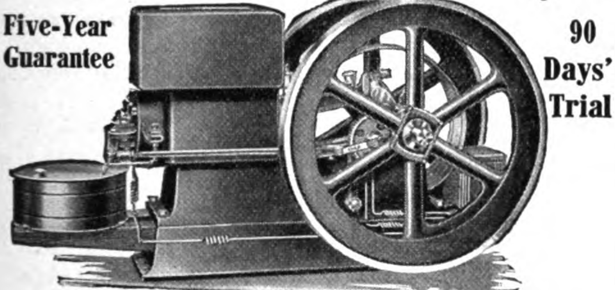
**GARAGE TESTING INSTRUMENT**

is the best, the most reliable and therefore the cheapest electrical equipment for you. It enables you to determine promptly and accurately the condition of the electrical equipment of any automobile, just where the trouble is and just how to remedy it.

Write for our **Special Proposition.**

**WESTON ELECTRICAL INSTRUMENT CO., 103 Weston Ave., Newark, N. J.**

*23 Branch Offices in the Larger Cities*



**WE PLEASE YOU**

**Or Refund Your Money**

**Five-Year Guarantee**

**90 Days' Trial**

**Neco ENGINES**

***Gasoline, Kerosene & Gas***

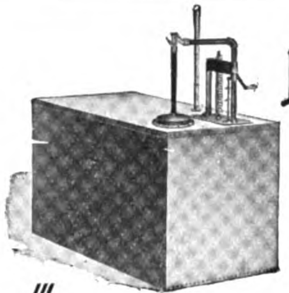
Highest grade medium-priced Kerosene engine on the market. Cuts fuel cost 65 per cent. Pleases the customer—saves him money—makes you money,

Made in sizes 2, 3, 4, 6, 8 and 12 H-P. Stationary, Portable or Saw-Rig styles. No limit to the business you can do if you push.

If your jobber cannot supply you, write us at once for special terms and prices.

**MANUFACTURERS ENGINE CO.**

**1898 Crystal Ave., Kansas City, Mo.**



**BOWSER** ESTABLISHED 1885

**Lubricating Oil Storage Systems**

Protect you against the loss that becomes greater as the price of oil advances.

**ELIMINATION OF WASTE through the proper method of oil storage and handling is vital to a profitable business**

This can best be accomplished with the Bowser. It prevents careless handling, over-measure and dripping. Keeps the oil free from dust, sediment and other impurities. Gains the profit that is otherwise lost.

*Write Today*

**S. F. BOWSER & CO., Inc.**

Fort Wayne, Ind., U. S. A.

Sales Offices in all Centers

Representatives Everywhere

**BEARINGS SERVICE COMPANY**

Nation-wide Service on Bearings

BEARINGS SERVICE COMPANY

**New York**
**Detroit**
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**Get this FREE display rack**

**A Vulcan Spring for every Car, Quick Service, Liberal Discounts.**

**JENKINS VULCAN SPRING CO.**

**Factory Branches Carrying Complete Stocks**

Saint Louis, Mo. - - 1402 Chestnut St.
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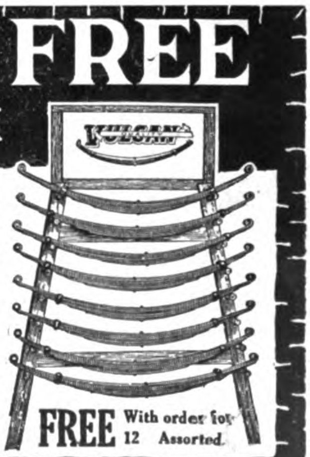
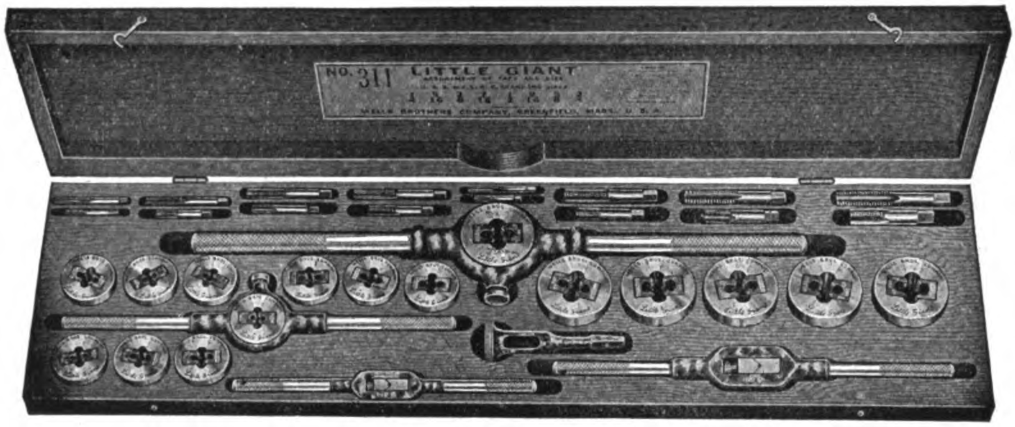


# Little Giant Combination Screw Plates

**Both United States and S. A. E. Standards**



These assortments are particularly valuable in the automobile repair shop where a considerable amount of threading is done. Each die is contained in its own collet and is adjusted to size. There is also a Bit Brace Die Holder for cleaning up battered threads in hard-to-get-at-places.

Every need of the manufacturer, the garage and repair man, or the car owner who makes his own repairs, for tap and die assortments can be supplied from our big line.

Send to-day for the circulars "Tools for the Automobile" "First aid in the up-keep of the Automobile."

**Greenfield Tap and Die Corporation, Greenfield, Mass.**

**New York Chicago Philadelphia Galt, Ontario**

## DO TIRE REPAIRING-

as a separate business department of your Garage. Business easy to get, grows steadily, and pays well; only small capital required and opportunity everywhere. For best work and surest profits use

## Akron-Williams

**TIRE REPAIR EQUIPMENT**

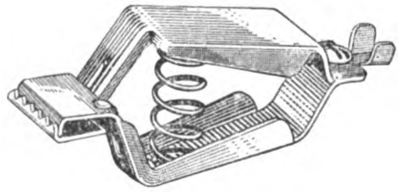
*Used and recommended by 60 Leading Tire Companies*

*Send for booklet No. 12 and catalogue on complete outfits for every size garage.*

**THE WILLIAMS FOUNDRY & MACHINE CO.**
**Ash Street, Akron, Ohio**

HESS-BRIGHT
BALL BEARINGS
"THE INIMITABLE BEARING"
DISTRIBUTORS IN EVERY CITY OF IMPORTANCE
The HESS-BRIGHT MANUFACTURING COMPANY
PHILADELPHIA, PENNSYLVANIA, U.S.A.

**Hook Up Your Batteries With Universal Battery Charging Clips**



They enable you to charge lighting and starting batteries without disconnecting them from the car.

Made of steel—lead plated—may be used over and over again.
No. 21-A—1⅛" spread of jaws.
Sample mailed postpaid for 15c in stamps.

Single Lots, Each 20c Lots of 10, Each 15c Lots of 100, Each 12 1-2c

**R. S. MUELLER & CO., 431 High Ave., S. E., Cleveland, Ohio.**

**THE MINIMUM IN DELIVERY COST**

## TON-A-FORD

(Trade Mark—Foreign Rights Reserved)

## Extension Chassis, $345

**F. O. B. RACINE**

Combined with a Ford Chassis (new or old) makes a Powerful Ton-Truck, with Ton-and-a-Half capacity.

**Dealers:** Write for specifications and our agency proposition

**TON-A-FORD TRUCK CO. 15th St., RACINE, WIS.**

GOODELL-PRATT

1500 GOOD TOOLS

*Write for Complete Catalog*

Goodell-Pratt Company
Greenfield, Mass.

*Toolsmiths*

Add to Garage Profits by Oxy-Acetylene Welding

Savings made please your patrons and pay good substantial profits

**PREST-O-LITE**

**Dissolved Acetylene**
**(Ready-made carbide gas)**

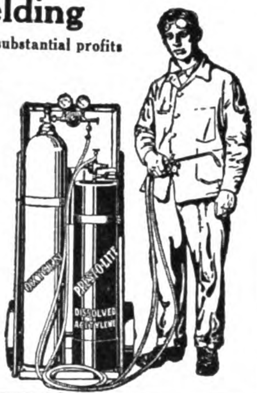
adds to the efficiency and usefulness of any good welding equipment. We furnish thoroughly high grade welding apparatus for $75.00. (Canada $100.00). The average user will also need gas cylinders at an additional cost, and about $10.00 worth of welding supplies. Truck and special equipment for cutting operations at extra cost.

***Send for details of Prest-O-Lite Service for Oxy-Acetylene Welding.***

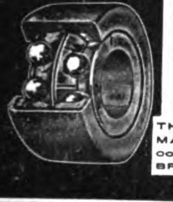
**The Prest-O-Lite Co., Inc.**

*World's Largest Makers of Dissolved Acetylene*

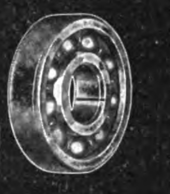
Main Office & Factory, 309 Speedway, Indianapolis
Can. Gen. Office, Dept. 0.-9, Toronto, Ont.



NEW DEPARTURE BALL BEARINGS



American Made
FOR
American Trade
QUALITY
FIRST



THE NEW DEPARTURE MANUFACTURING CO.
CONRAD PATENTS LICENSEE
BRISTOL, CONN., U. S. A.

WM.B.SCAIFE & SONS CO.
PITTSBURGH, PA.
BRAZED
AIR TANK

SCAIFE COPPER-BRAZED
AIR TANKS

are positively guaranteed to hold air indefinitely without loss of pressure.

**CAUTION**

Do not confuse Scaife Copper-Brazed Tanks with the cheap Welded or Soft-Soldered Tanks made by others.

We Also Manufacture
SCAIFE GASOLINE STORAGE OUTFITS

*Send for Catalogues.*

WM. B. SCAIFE & SONS CO.,
First National Bank Bldg. PITTSBURGH, PA.

"NORMA"

BALL BEARINGS

(Patented)

Dependability—isn't that the really essential quality in any car? Isn't dependability—so far as car performance is concerned, synonymous with pleasure-capacity and service-capacity? And doesn't dependability in the car as a whole demand dependability in every detail of construction and equipment? The ignition apparatus and lighting generator, for instance?

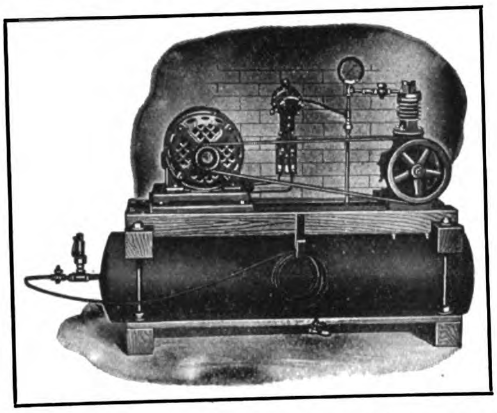
"NORMA" Bearings are the standard bearings in the high-grade magnetos and lighting generators used on cars and trucks of the better class, and adopted because of their proved dependability. It is, then, a mere statement of fact to say that "NORMA" Bearings identify dependable magnetos and lighting generators.

**Be *Sure*—See That Your Electrical Accessories Are "NORMA" Equipped**

THE NORMA COMPANY OF AMERICA
1790 BROADWAY NEW YORK
Ball, Roller, Thrust and Combination Bearings.

GARDNER LINE

*Free Air Unit*



**Free Air Unit** One of the many outfits we manufacture

WE HAVE A PUMP
FOR EVERY SERVICE

*Economical — Efficient and Cheap*

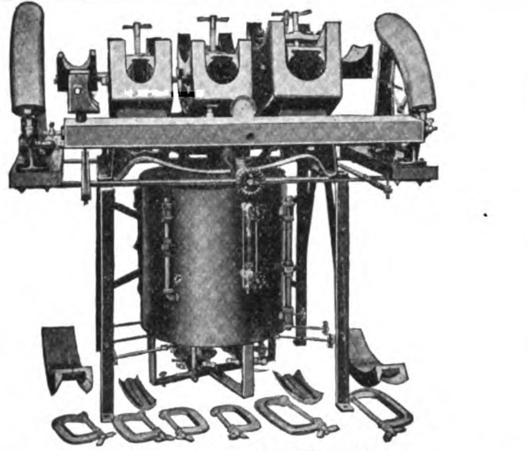
CHICAGO
1702 Fisher Bldg.

NEW YORK
302 Singer Bldg.

PHILADELPHIA
604 Arch Street

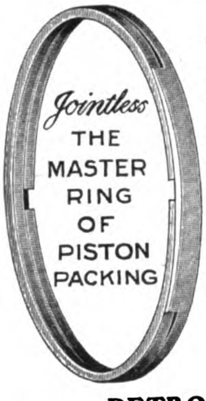
LOS ANGELES
Rix Compressed Air & Drill Co.
409-11 E. Third St.

SAN FRANCISCO
Rix Compressed Air & Drill Co.
505 Howard St.



*Vanderpool 3 Cavity Vulcanizer*

VANDERPOOL CO., Springfield, Ohio



**Jointless Piston Rings**

There are no substitutes for Jointless Piston Rings. The Jointless affords every quality found in other rings and assures to all users a permanent, gas tight ring, more power, less carbon, increased mileage, less gasoline and lubricating oil.

The Jointless eliminates all usual piston ring troubles. It is finely constructed and its efficiency makes the Jointless a money making and saving proposition for any owner of a pleasure car or truck.

**List Price $1.00**

Sold by all Jobbers and Dealers.

DETROIT PISTON RING CO.

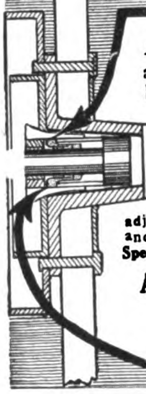
53 Richmond Ave. Detroit, Mich.

**DETROIT BATTERIES**

For every make and model of motor car carrying an electric starting system. Replacements on cars no longer manufactured can be had promptly.

**Detroit Battery Co.**
Detroit, U. S. A.

**CURE LEAKY REAR AXLES**



Avoid grease and dirt on hubs and wheels, oil-rotted tires, oil-soaked brake linings and dry bearings on your FORD.

**KANT-LEEK** WASHERS For Fords

are the positive and inexpensive remedy. A set of four makes grease "stay put." Simple, nothing to adjust, easily applied They'll end rear-axle bearing troubles and keep repair bills down.

**Per Set, 90c.**

Special Discount for Dealers and Jobbers.

**APEX MFG., CO., Inc., St. Louis, Missouri.**

Exclusive Selling Agent, H. BECKER.
Room 306 Monroe Bldg.,
104 So. Michigan Ave., Chicago.

With the "Tonford" unit, any Ford old or new can be made into a one-ton truck. You can run it with but very slight increase in cost of operation as compared with the pleasure car. Its ability to take care of many more deliveries with the same cost of upkeep will quickly make it pay for itself.

**Tonford**
TRADE MARK

***$350 f. o. b. Detroit, Internal Gear $390***
***56 and 64 inch treads***

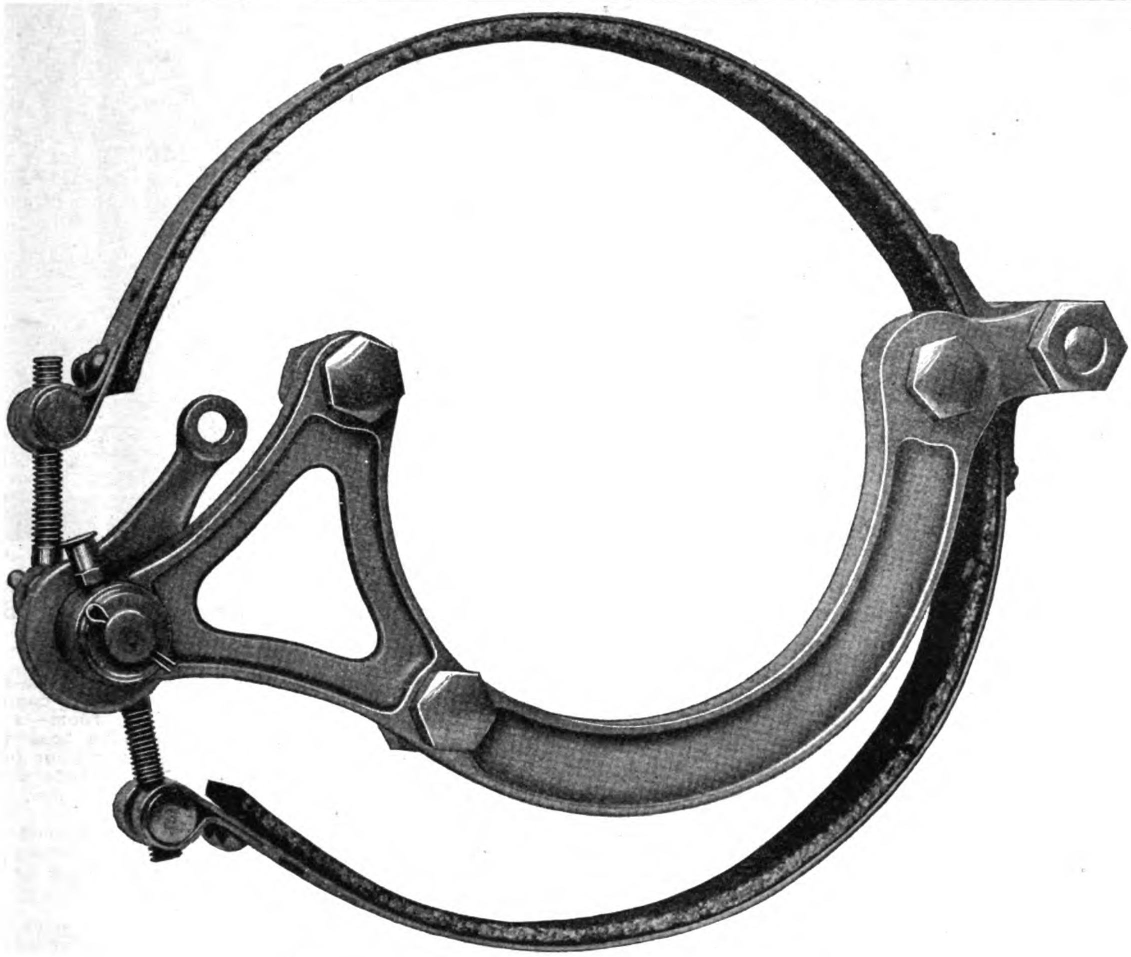
**DETROIT TRUCK COMPANY**
Detroit, U. S. A.

The MANLEY GARAGE
AND SHOP EQUIPMENT

Every garageman and repairman should get our catalog. You'll find in it just the time and labor savers you need, and their prices will astonish you by their moderateness.

*Send for your copy of this catalog today*

THE UNITED ENGINE & MFG. CO.
Hanover, Pa.



HOLDFORD BRAKES
SAFETY FIRST

# The Perfect, Practical, Positive Brake For Ford Cars

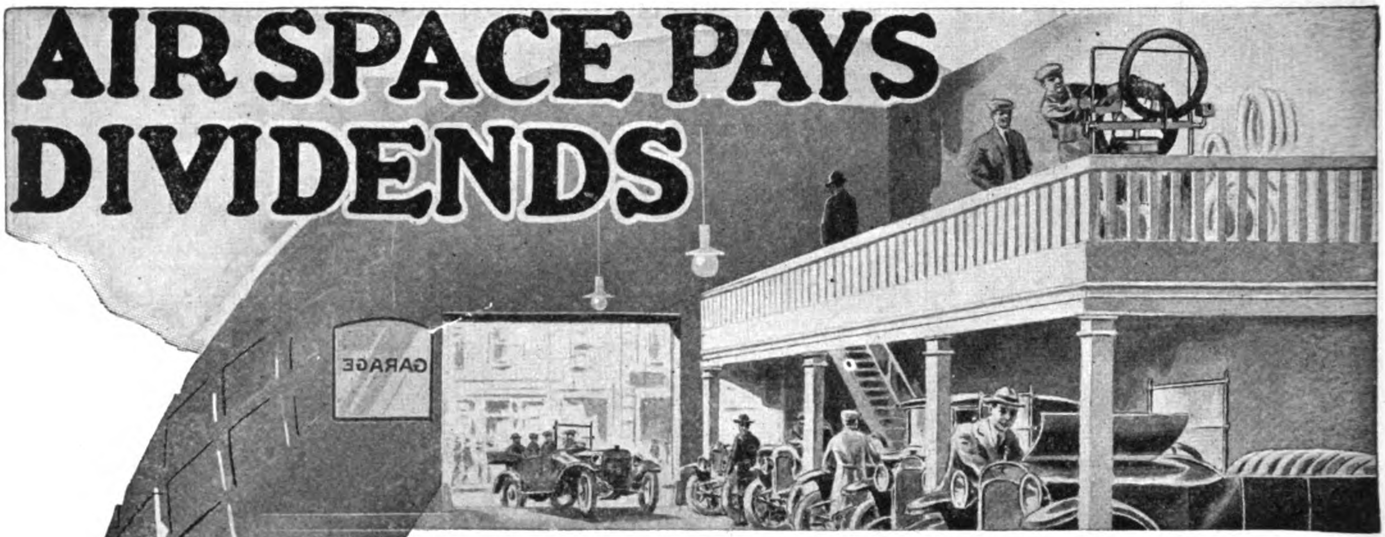
## NOT ONLY MAKES YOU FEEL SAFE, BUT ASSURES YOUR SAFETY

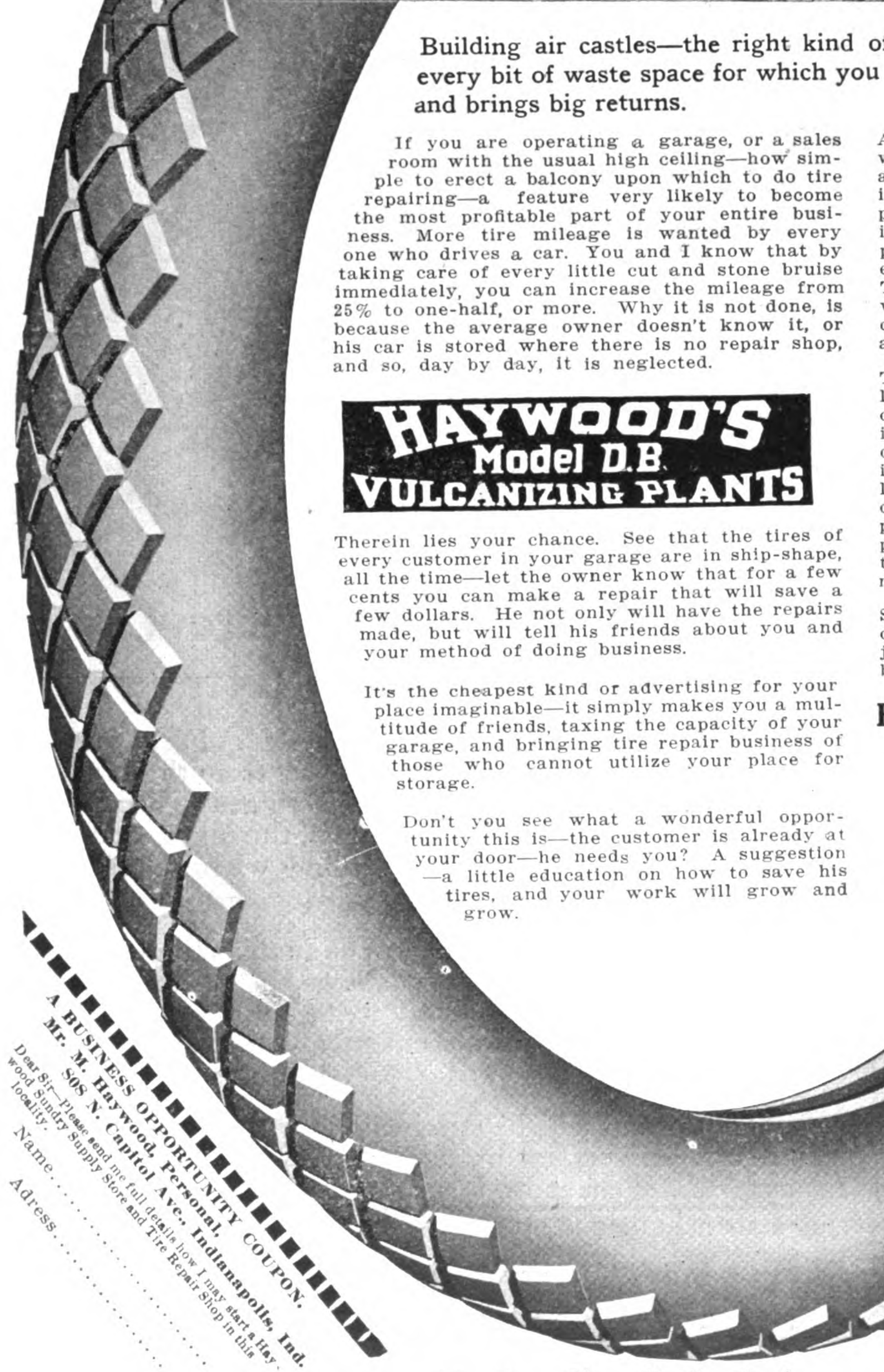
**HOLDFORD BRAKES** are high-grade external contracting brakes for Ford cars, which can be easily and quickly installed to act from the hand lever as emergency brakes, or from the foot pedal as service brakes. Designed in accordance with the best engineering practice; the band and brace are of steel, the toggle crank and bracket are drop forgings and the lining J-M non-burn. Do not drag when released, no readjustment for wear is necessary and oiling is easy.

The brake usually supplied with this car cannot be depended upon in that "tight corner" or "on the hill." The hand brake wears out quickly and allows the car to creep when being cranked. The constant use of the foot brake quickly wears out the transmission. As the foot brake operates from the drive shaft any accident to the axle or the stripping of gears might mean a serious accident.

**HOLDFORD BRAKES** save wear and tear and will be attached by the wise owner on his pleasure car, delivery car or truck. They will positively stop a Ford with locked wheels on *any grade, at any speed, with any load.* Not necessary to remove old brakes. (When ordering state whether hand or foot brakes are wanted).

**THE G. H. DYER COMPANY, - - - Cambridge, Mass.**





# AIR SPACE PAYS DIVIDENDS

**Building air castles—the right kind of air castles—the kind that utilizes every bit of waste space for which you are paying rent—is good business and brings big returns.**

If you are operating a garage, or a sales room with the usual high ceiling—how simple to erect a balcony upon which to do tire repairing—a feature very likely to become the most profitable part of your entire business. More tire mileage is wanted by every one who drives a car. You and I know that by taking care of every little cut and stone bruise immediately, you can increase the mileage from 25% to one-half, or more. Why it is not done, is because the average owner doesn't know it, or his car is stored where there is no repair shop, and so, day by day, it is neglected.

## HAYWOOD'S
## Model D.B.
## VULCANIZING PLANTS

Therein lies your chance. See that the tires of every customer in your garage are in ship-shape, all the time—let the owner know that for a few cents you can make a repair that will save a few dollars. He not only will have the repairs made, but will tell his friends about you and your method of doing business.

It's the cheapest kind or advertising for your place imaginable—it simply makes you a multitude of friends, taxing the capacity of your garage, and bringing tire repair business of those who cannot utilize your place for storage.

Don't you see what a wonderful opportunity this is—the customer is already at your door—he needs you? A suggestion—a little education on how to save his tires, and your work will grow and grow.

A WONDERFUL MACHINE—This Plant is a wonderful machine—simple, compact, quick acting, requiring little room—a balcony is ideal. Perhaps you have been thinking of putting up a balcony for your office. Make it a little larger and include a vulcanizing plant. If you haven't one now, you are not earning all that you should.

This new machine is designed for garage work, and will do all ordinary repairs on casings or tubes. It will earn its cost almost any week.

THE PRICE IS LOW—The price is unusually low—only $45—an investment no garage man can afford to stop to consider. Its operation is simplicity itself. Anyone can do it without special training—our splendid book of instructions makes it all perfectly clear. A little practise on an old casing or two will quickly educate you. Or come to our complete training school at the factory—the expense is very modest—but none of our customers have found this necessary on this machine.

So fill out the coupon and send today for the complete information and name of the nearest jobber. It's worth your while, if you do not buy. Don't delay—send the coupon now.

**Haywood Tire & Equipment Co.**

808 N. Capitol Ave., Indianapolis, Ind.

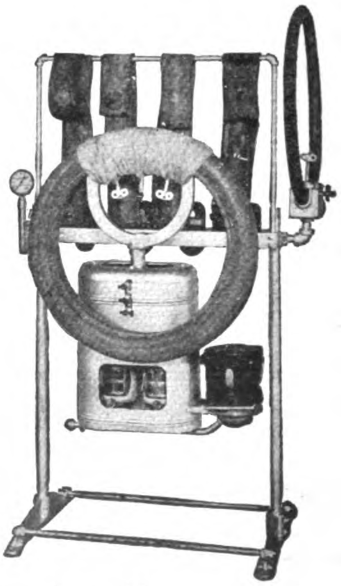
A BUSINESS OPPORTUNITY COUPON.

Mr. M. Haywood, Personal,
808 N. Capitol Ave., Indianapolis, Ind.

Dear Sir—Please send me full details how I may start a Haywood Sundry Supply Store and Tire Repair Shop in this locality.

Name..............................

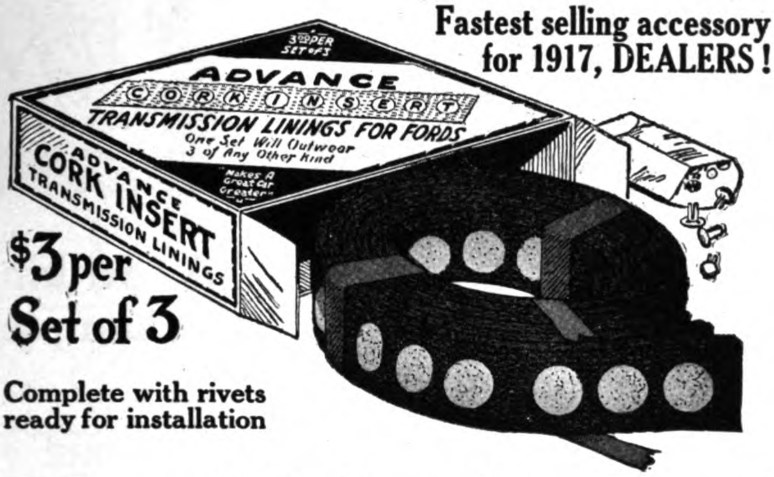
Adress..............................



# CORK INSERT

## Transmission Linings for Fords

**Fastest selling accessory for 1917, DEALERS!**


3.00 PER SET of 3
ADVANCE
CORK INSERT
TRANSMISSION LININGS FOR FORDS
One Set Will Outwear 3 of Any Other Kind
Makes A Great Car Greater
ADVANCE
CORK INSERT
TRANSMISSION LININGS

**$3 per Set of 3**

**Complete with rivets ready for installation**

## They Make the Ford Brake BRAKE

YOU know how the Ford jumps when it starts, and jerks when it stops—how it shivers and jars every time the brake goes on. Here is something that puts velvety smoothness in the Ford Transmission, so that it goes into low or reverse like a high-priced car. It starts gliding to a quiet stop at the first touch of the toe on the brake. No more chatter, no more jar—regular big car stuff.

Ordinary transmission fabric becomes glassy surfaced and hard and does not grip unless excessive pressure is brought to bear. Then it suddenly grabs and slips—causing jars and the mechanism-killing vibration. The corks in Cork Insert Linings eliminate the slipping, the jarring, the vibration, of starting and stoping. In addition Cork Inserts outlast two to three sets of ordinary linings.

### Get Cork Inserts, Now, Dealers!

Cork Inserts (both Transmission Linings and Fan Belts for Fords) are being advertised to your trade in the Saturday Evening Post and leading trade papers. They are selling by the thousands. Your customers know about them and are ready to buy as soon as you are prepared to sell them. They give better service with increased economy. Use the coupon and send your order today for Cork Inserts. Your jobber will get full credit.

## And Now This New Big Winner

**ADVANCE**

**CORK INSERT**

**FAN BELT FOR FORDS**

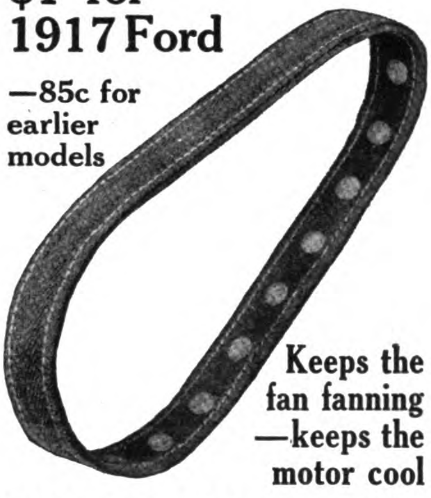
Most motor troubles are caused by overheating. Overheating would largely be avoided if the fan were kept fanning by a belt that didn't slip. The slipping of the ordinary Ford Fan Belt runs between 25% and 50%. It's bound to get slippery from the soaking in oil and water and the polishing action of service. Cork Insert Fan Belts

### Keep the Motor Cool —They Don't Slip

Corks are inserted into high grade, waterproof oak leather, and backed by heavy waterproof fabric. The corks stop the slipping. They are unaffected by water or oil, grease or dirt. They *retain* their gripping qualities throughout a service several times as long as ordinary belts.

**$1 for 1917 Ford**

**—85c for earlier models**



**Keeps the fan fanning —keeps the motor cool**

### Dealer Coupon

**Advance Automobile Accessories Corp.,**
**Dept. G 3-1 56 East Randolph St., Chicago**

Send by express, subject to regular dealer discounts, the following:

( ) 1 dozen sets Cork Insert Transmission Linings.
( ) 1 dozen Cork Insert Fan Belts, 1917 size.
( ) 1 dozen Cork Insert Fan Belts, 1916 size.

Name..........................................................

City..........................................State..........................

Jobber's Name..........................................................

*Car Owners! Send the coupon for Cork Inserts. Your dealer will get full credit.*

**Advance Automobile Accessories Corp.**
**Dept. G 3-1**
**56 East Randolph Street**
**Chicago, Illinois**

### Ford Owner Coupon

**Advance Automobile Accessories Corp.,**
**Dept. G 3-1 56 East Randolph St., Chicago**

Enclosed find $.....................

Send me ( ) 1 set Cork Insert Transmission Linings, $3.00
( ) 1 Ford Fan Belt for 1917 Ford.............. 1.00
( ) 1 Ford Fan Belt for 1916 or earlier Ford models.............................................. .85

Name..........................................................

City..........................................State..........................

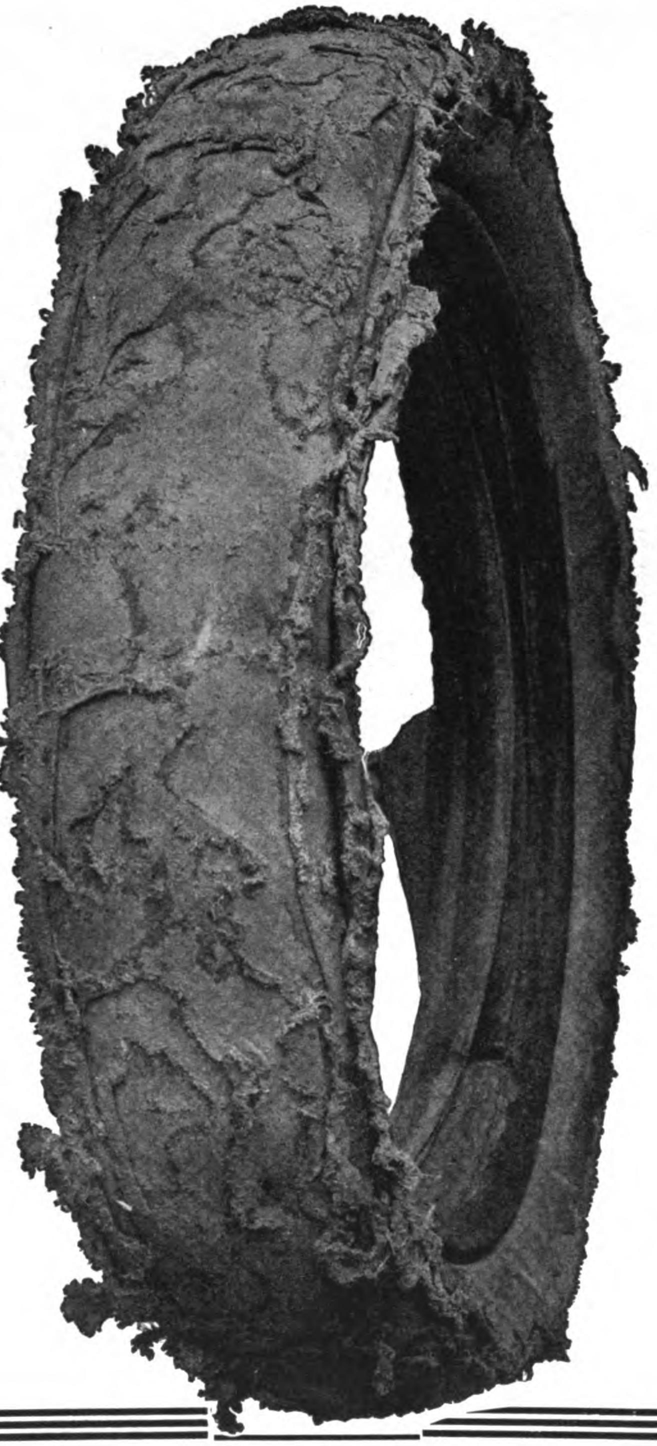
Dealer's Name..........................................................

**(When Writing to Advertisers, Please Mention the Accessory and Garage Journal.)**

What would this exclusive agency be worth in your town?

An agency that means you would earn all profits—be protected against price cutting—and have big revenues from a most successful tire and tube saving device. What would the agency be worth now—since tires and tubes have advanced in price—making every owner a prospective customer for four such devices?—

**MAXOTIRES**



## A Striking Example

A shoe that afforded usual mileage was equipped with a MAXOTIRE.

The average owner would have discarded it—yet with the MAXOTIRE, gave thousands of additional miles of service.

This was so much net gain to the owner.

The MAXOTIRE is as good as new, and will continue to save tires and tubes.

(This tire was exhibited at many STATE FAIRS and AUTO SHOWS and was examined by tens of thousands of Auto Owners.

# MAXOTIRES

We do business with but one dealer in any place and do not sell jobbers or consumers. Our proposition is broad and extremely liberal.

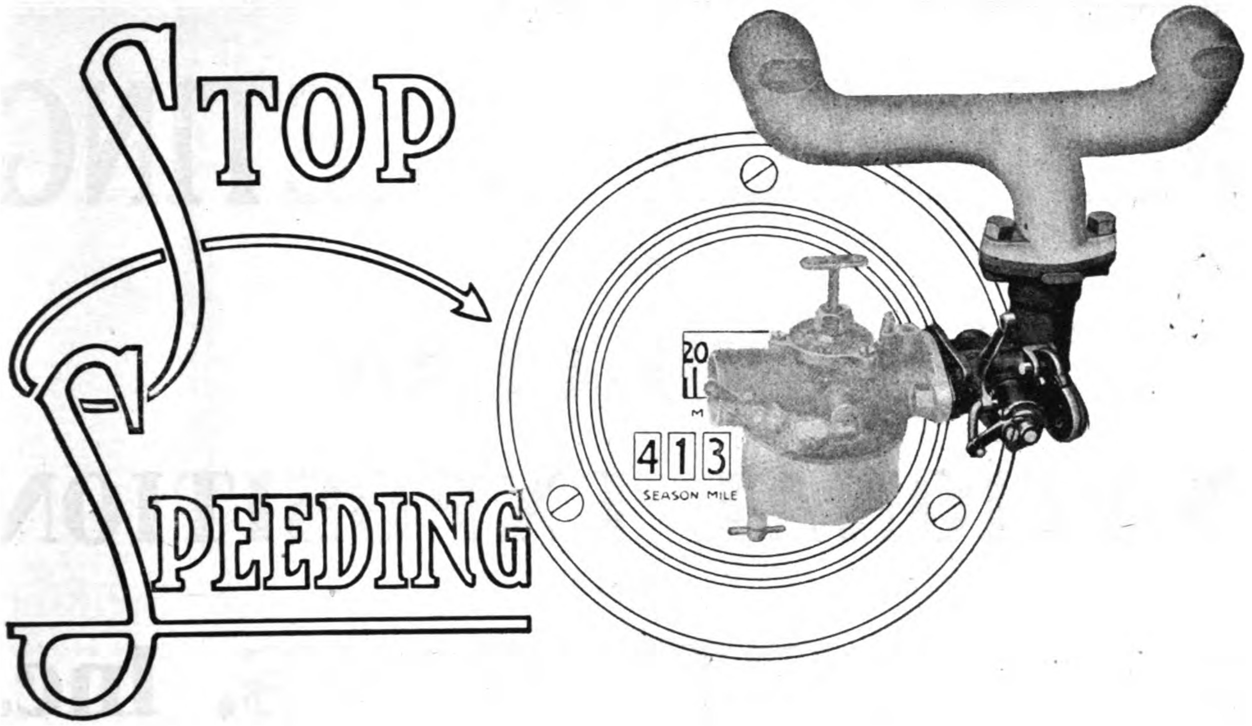
No other accessory sells so quickly or affords equal satisfaction. *The cost of tires and tubes is advancing and owners are seeking service giving and money saving equipment.*

Country-wide advertising brings queries from every city, town and village. Our dealers do all the business.

The quality of MAXOTIRES insures reorders and big net profits. MAXOTIRES sell themselves.

Our old dealers are with us this year—some are ordering MAXOTIRES in Car Load Shipments. Hundreds are ordering from a dozen to five-hundred tires at a time. You will be "doing it too"—if you get a few MAXOTIRES started. They sell themselves.

**K & W RUBBER COMPANY** **Third Street, ASHLAND, O.**



Every Ford delivery car needs a Monarch Speed Governor. Drivers can be hired and fired, but the speed abuse goes on just the same. To effectively check this common abuse—to stop the enormous waste in repairs, tires and gasoline, it must be done automatically. Depending upon human judgment only helps occasionally. Thousands of accidents to other vehicles and to people which occur daily could be avoided if fast driving were made impossible.

**$25.**

COMPLETE, READY TO INSTALL.
NO HOLES TO DRILL—
NO MECHANICAL CHANGES.

## MONARCH
## SPEED GOVERNOR
## for Ford Cars

**$25.**

PAYS FOR ITSELF MANY TIMES A YEAR.

### DOES NOT AFFECT THE POWER

The Monarch Governor operates by the velocity of the gas as it passes from the carburetor into the intake manifold. There are no shafts or gears—nothing to get out of order. Doesn't even need oiling. While it will not permit the motor to run beyond a predetermined maximum speed it does not affect the pulling power. It is impossible for the driver to change the maximum motor speed because that adjustment is Yale padlocked—the owner holds the key. It is operative the instant the motor starts—both while the car moves and stands still. Idling the motor at high speed is impossible.

### EASILY INSTALLED

Any mechanic can install a Monarch Governor in a few minutes. Complete instructions accompany each governor. There are no holes to drill and no mechanical changes.

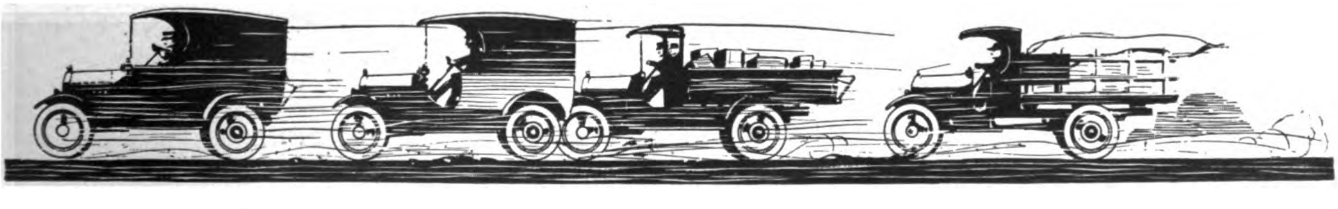
### BIG OPPORTUNITY FOR DEALERS

Wherever Fords are used for delivery service or as tractors, dealers are selling Monarch Governors. They are easy to sell because they have long been needed. The field is too large for us to handle by direct shipments to owners. We prefer to turn this big business your way.

**Send today for our dealer proposition. There's a big opportunity in your city right now. Each day it grows larger. Write at once.**

## Monarch Governor Company

**524 Bethune Avenue West, DETROIT, MICHIGAN**



**MONSTER MEETING**

**OF THE**

**FORD CLAN**

**NATIONAL EXPOSITION**

**FOR**

**FORD ACCESSORIES, Inc.**

COLISEUM—CHICAGO

**SEPTEMBER**

22nd to 29th, Inclusive, 1917

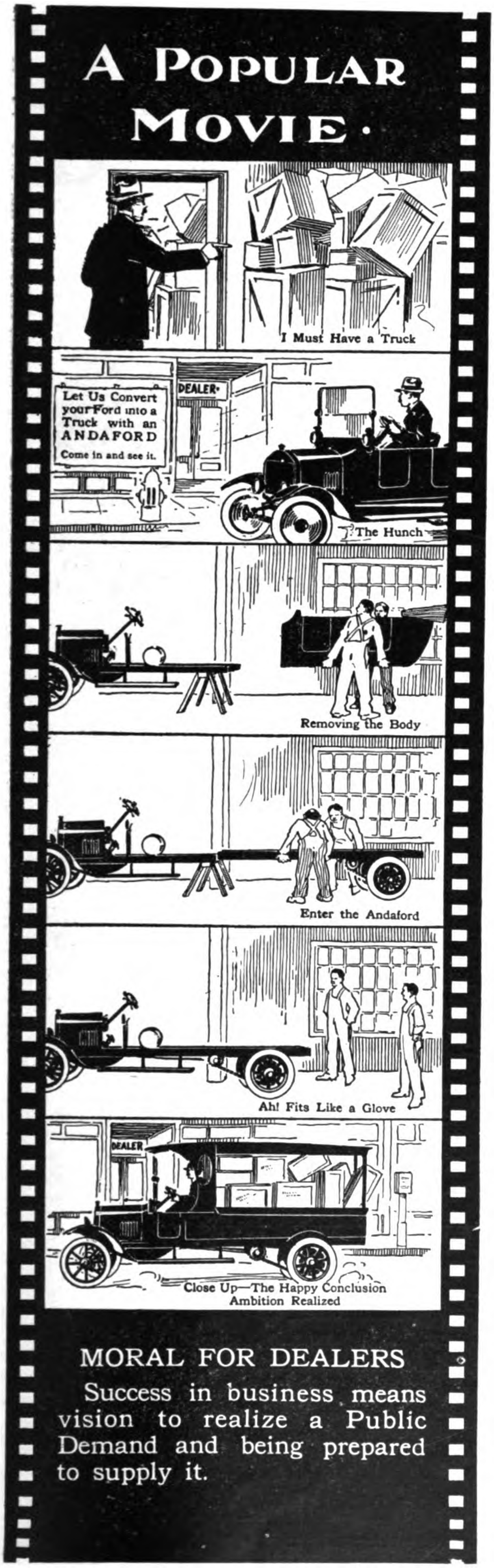
Thousands of Accessories for Autos, Trucks and Tractor Attachments, Will Be On Display

Hundreds of Manufacturers Will be Represented, Thousands of Jobbers, Dealers and Car-Owners

WILL ATTEND

For Further Information
Regarding Space, Etc.,
Write

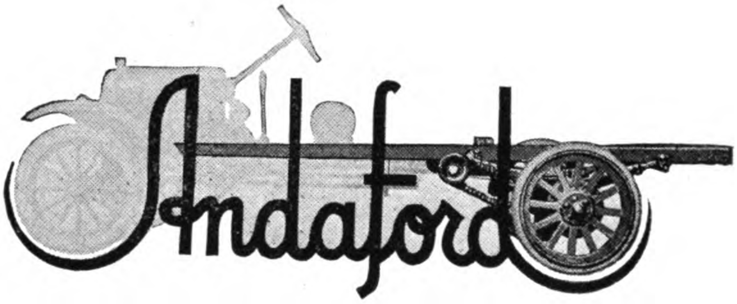
NATIONAL EXPOSITION FOR
FORD ACCESSORIES, Inc.,
**Headquarters—New Southern Hotel**
**Chicago, Illinois**


A POPULAR MOVIE·
I Must Have a Truck
Let Us Convert yourFord into a Truck with an ANDAFORD Come in and see it.
DEALER·
The Hunch
Removing the Body
Enter the Andaford
Ah! Fits Like a Glove
DEALER
Close Up—The Happy Conclusion Ambition Realized

MORAL FOR DEALERS

Success in business means vision to realize a Public Demand and being prepared to supply it.

# $295.00



## LOWEST IN PRICE BIGGEST IN VALUE

"And the little old Ford it rambled right along" says the song, a tribute to Ford efficiency and durability. Millions of Fords, now rambling as pleasure cars, will continue to ramble in the future as sturdy, dependable, 2500-pound trucks.

Business men are awakening to the fact that it is folly to buy a new truck or do without, when a Ford can be so easily and quickly converted into a first class 2500-pound truck, at such a surprisingly low cost. There's a good, profitable harvest in this field for live dealers.

## THE ACTUAL MARKET

The demand for trucks of this capacity is enormous and certain. The money saving inducement for the merchant in being able to secure so easily a truck with the well known efficiency of the Ford, means a money making proposition of stupendous proportions for dealers. No need to develop a market. It is ready and waiting.

## THE POTENTIAL MARKET

The future needs for small trucks can hardly be estimated. When trucks can be procured at so low a cost, thousands of uses will be found for them, which are as yet unthought of. Your imagination can run riot along this line without exceeding the possibilities. The low upkeep of the Ford will result in fleets of Ford trucks replacing the heavier kind, etc. Be ready for the harvest.

## WHY THE ANDAFORD

The ANDAFORD attachment, composed of chassis, heavy artillery rear wheels, springs, chain drive, etc., made to attach rigidly to original Ford chassis by simply removing pleasure car body and rear wheels, is designed by men associated with the auto industry ever since it was an industry. In construction, utility and quality of materials it is supreme, and the price—$295, will make it a ready seller. Limited space prohibits lengthy description, but suffice to say, facility for enormous production enables us to turn out the biggest value on the market at the lowest price, with a profit to dealers that we know will interest you.

## YOUR BEST INTERESTS

demand looking into the money making possibilities of the ANDAFORD. Get into this profitable field now.

## THE ANDAFORD TRUCK COMPANY

**Jefferson and McDougall Aves.** **DETROIT**

THE ANDAFORD TRUCK CO.,

Please send me full information regarding Andaford.

Name______________________________

Address______________________________

City______________State______________

Little Giant
Trucks

# Are You the Man?

We are looking for one man, a man of exceptional ability and initiative. Some one man, above all others in every community, has the particular ability we seek. When we find him, he will immediately begin to build, with our aid, prestige and profit for himself.

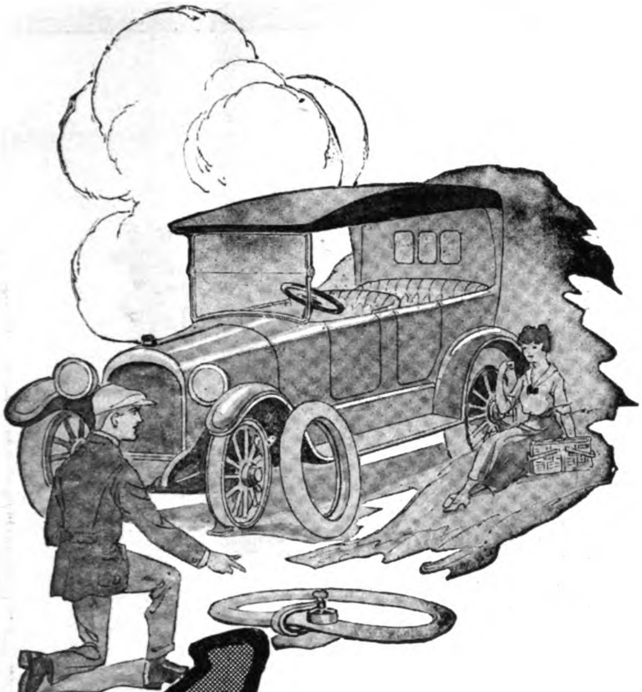
He will be the highly capable representative of a highly capable motor truck. Little Giant.

He will be backed by a world-spanning organization, that has 23 years' reputation and experience in the building of engineering tools and machinery. He will be backed by the record that thousands of their trucks have made in over 175 varied types of business endeavor. He will be backed by the proof of service that many of these trucks have given for over nine years. He will be backed by intensive local newspaper advertising over his name, in his territory. He will be backed by a truck, whose specifications set so high an efficiency standard, that it represents the most desirable hauling-equipment purchase that can be made by men who have things to move. He will be backed by a complete line—1-Ton, 2-Ton, 3½-Ton, and Convert-a-Car (Ford truck unit); and their extra exclusive cost-cutting feature—the Duntley Hydro-Pneumatic Gas Generator, which burns half kerosene and half gasoline, cutting fuel cost in two.

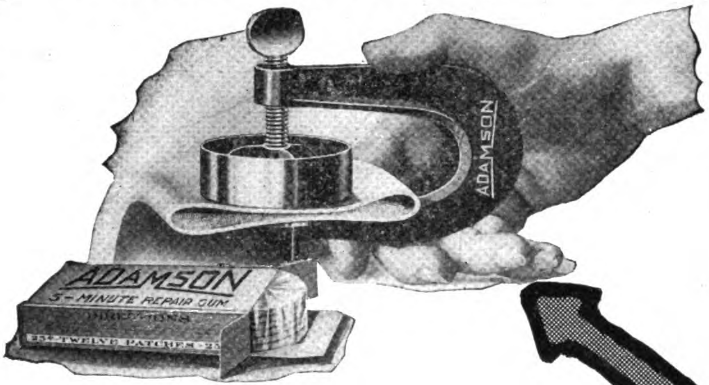
***Write today, or better still, telegraph your belief that you are the alert, progressive, capable man we want; that you can ably represent in your community the Little Giant Trucks with the habit of heavy performance. Made that way by the $14,000,000***

**CHICAGO PNEUMATIC TOOL CO.**

**621 Little Giant Building** **1615 Michigan Avenue, Chicago**



THE NEW
ADAMSON
MODEL "E"
5-MINUTE VULCANIZER



**The Complete Line**

For larger tube injuries, tire and tube blowouts, tread cuts, etc., the "Adamson" line is complete with various outfits.

Prices range from $1.50 for Model "M" for tube repairs only, to $12.00 for Model "S" for tire and tube repairs and private garage and repair shop use.

The New
ADAMSON
VULCANIZER

These folders furnished free to "Adamson" Dealers. Order a supply for your customers.

A light and handy outfit for the quick repair of tube punctures. Makes repairing a pleasure.

Uses common gasoline—the most convenient and dependable fuel. Will vulcanize your tubes **anywhere** in five minutes.

Built on the same proven principles that have made "Adamson" Vulcanizers the most practical and largest selling line in the World.

Complete with box of a dozen "Adamson" 5-Minute Repair Gum Patches for $1.00. Extra box of 12 patches only 25c.

**Dealers:**
**This outfit is a tremendous seller.**
**Order now from your jobber.**

**Adamson Manufacturing Company**
**East Palestine, Ohio**

ALBERT CHAMPION

# A Statement by Albert Champion

I wish to inform Motordom that my *only* connection in the Spark Plug business is with the Champion Ignition Company of Flint, Michigan, manufacturers of AC Spark Plugs.

I am the same Albert Champion who was at one time middle distance bicycle champion of America and I was the *first* to introduce motorcycles into America.

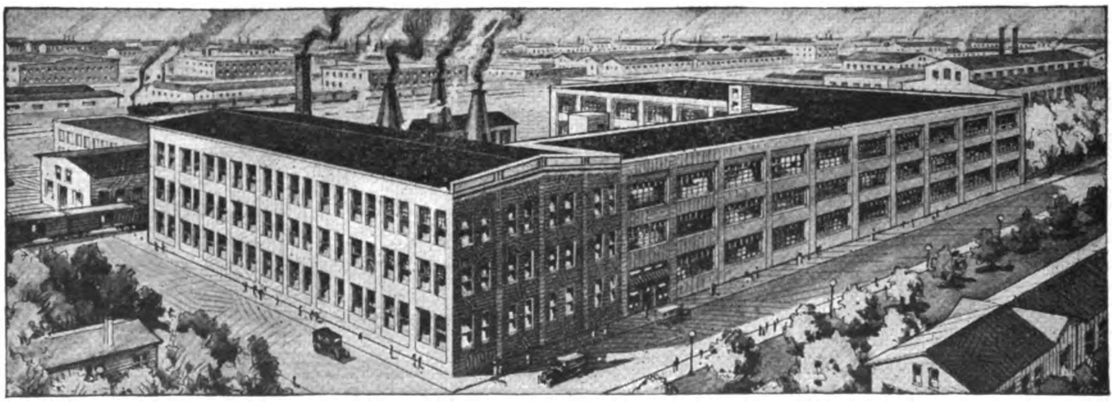
When my motoring friends want Spark Plugs that they know are made under my personal management and supervision they should ask for AC Plugs and they should bear in mind that AC Plugs are made only by the Champion Ignition Company of Flint, Michigan.

Albert Champion ***President***

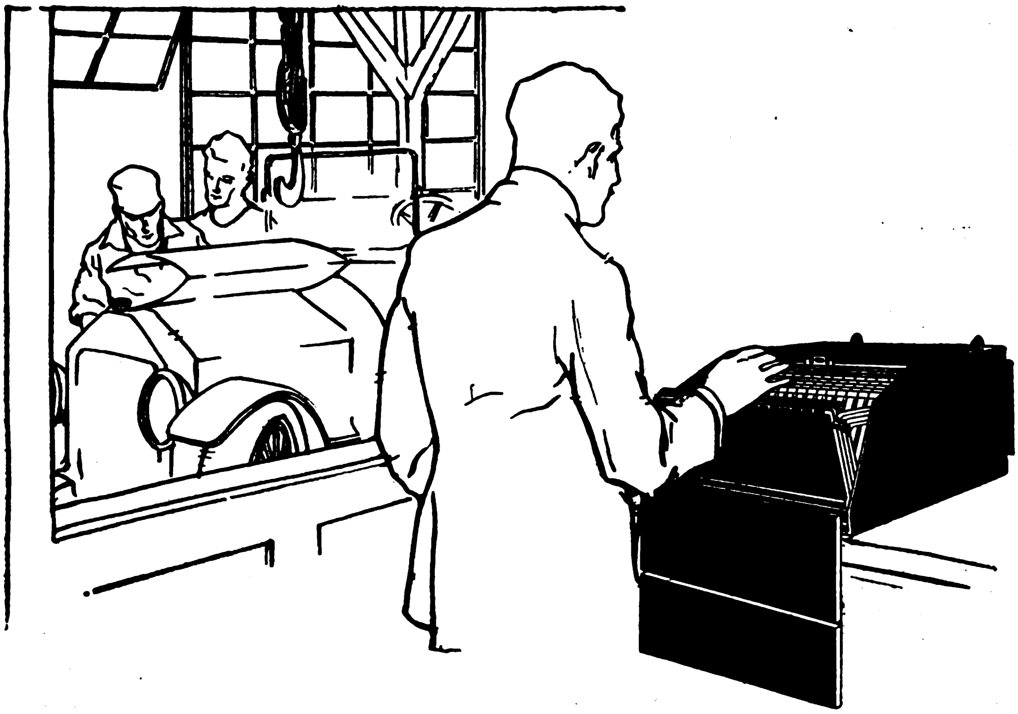
**CHAMPION IGNITION COMPANY, FLINT, MICHIGAN, U. S. A.**

***Sole Manufacturers of***

**AC** *The Standard Spark Plug of America*



***Plant of the Champion Ignition Company, home of AC Plugs***



**A simple, complete system for keeping customers' accounts**

## *The National Cash Register Credit File*

Cuts out all bookkeeping—avoids all errors. Saves time—saves effort—saves money.

No ledger—no more forgotten charges. Keeps every customer's account balanced to the minute and ready for immediate settlement. Gives an accurate statement any time one is wanted.

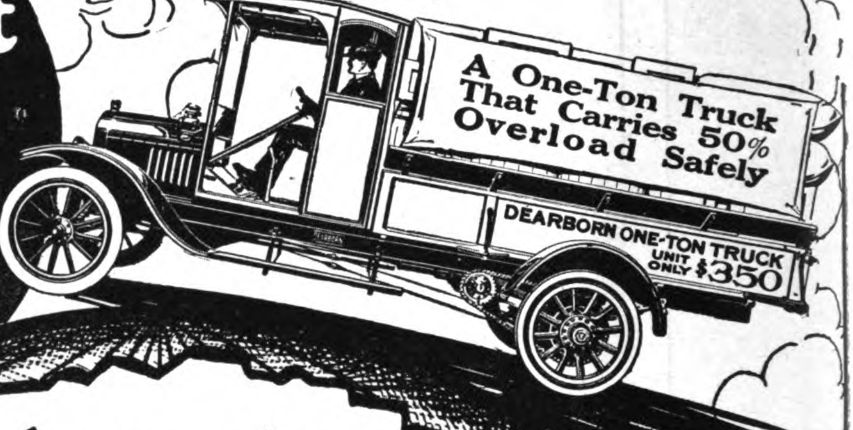
Simple and complete. Easy to operate. The ideal credit file system for automobile dealers and garage men.

*Do not waste time, effort and patience doing the work a machine can do for you. Write to us for literature on the Credit File.*

**Address Department 36**

**The National Cash Register Co., Dayton, Ohio**

# The Dominant One-Ton Truck Unit


A One-Ton Truck That Carries 50% Overload Safely
DEARBORN ONE-TON TRUCK
UNIT ONLY $350

## *Announcing*

## The Dearborn Universal One-Ton Truck Unit for All Cars

A bigger, more profitable money maker for dealers.

A One-Ton Truck Unit that fits *all* cars and made by a strong company, whose success in building Truck Units has been demonstrated nationally.

With the new Dearborn Universal Truck Units you can profitably solve the Used-Car problem in your locality. Convert these cars into trucks. For cars with larger horsepower use the *new* Dearborn Universal Two-Ton Truck Unit.

**$350 and up**

## One or Two-Ton DEARBORN Truck Unit

**$350 and up**

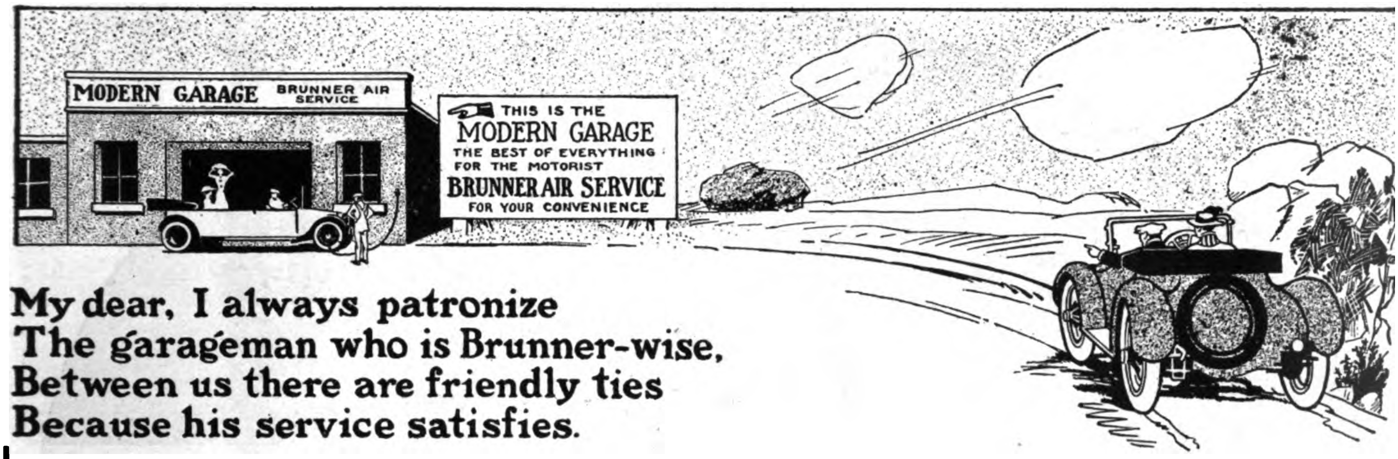
All Dearborn Truck Units are designed so that 90% of the load is carried on their heavy Dearborn Rear Axles, Heavy Springs and Heavy Pruden artillery type Rear Wheels, with guaranteed hickory spokes and felloes.

Bock Heavy Duty Roller Bearings, Baldwin Roller Chains, Baldwin Steel Sprockets, Jack-Shaft Hangers and Back-Rod Hangers HOT riveted to frame—not *merely* bolted.

Wire or write for Dealer's Big Money Making Proposition.

**Dearborn Truck Co.**
1262-74 S. Campbell Avenue
Chicago

# A MONEY MAKER



My dear, I always patronize
The garageman who is Brunner-wise,
Between us there are friendly ties
Because his service satisfies.

**YES, Mr. Garageman, the Brunnerwise Motorist knows that Brunner Service satisfies and he knows that when he pulls up in front of the garage bearing the Brunner Sign that he will find an ample supply of air at his disposal.**

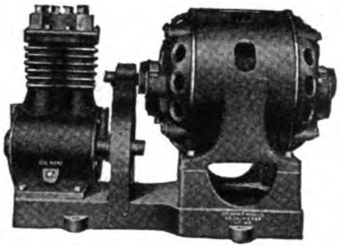
**Garage efficiency begins at the end of the air hose—the good, healthy flow of air at the end of the Brunner Air Hose always inspires confidence in your service.**

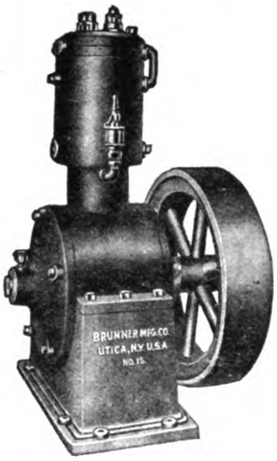
**The army of Brunnerwise Motorists is increasing rapidly and the Brunner sign draws their trade because to them it is always**

## "The Sign of Satisfaction"

BRUNNER MFG. CO.
UTICA, N.Y. U.S.A.

WE USE A BRUNNER AIR COMPRESSOR
FREE AIR
FOR YOUR CONVENIENCE





**Thousands upon thousands of motorists are now mapping out their summer tours, and thousands of them are Brunnerwise Motorists with pleasant memories of the Brunnerized Garages along the way, and they will speed along the trail with one eye on the road and the other eye on the lookout for the Brunner Sign, and the Brunnerwise Garageman will get their business.**

**Mr. Garageman, these Brunner "ads" are making Brunnerwise Motorists every day. Motorists read these "ads" and are prompted to investigate Brunner service, and when they do investigate Brunner Service they become Brunnerwise and accept the Brunner Sign as a sure sign of prompt and efficient service.**

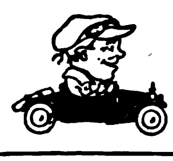
**Now is the time to look into this high class service proposition and secure the benefits which are resulting from a forceful automobile trade paper advertising campaign.**

## INVESTIGATE THE BRUNNER AIR COMPRESSOR

**Be honest with yourself and investigate the garage air compressor question thoroughly before deciding on your new equipment. The Brunner will stand investigation and the more thorough the investigation the more certain will be your decision in favor of Brunner Service, because it not only insures compressed air efficiency of the very highest order, but it also insures that very desirable and liberal patronage of the Brunnerwise Motorist, which follows the Brunner Sign.**

**We will be glad to send you the name of the Brunner Jobber who covers your town, also our catalogue and Garageman's Handbook on Compressed Air—a book which every garageman should read carefully. They are all free for the asking.**

## BRUNNER MANUFACTURING COMPANY



**Main Office and Plant:**
**UTICA,**
**N. Y.**

**Cincinnati Branch:**
**419 First National Bank Building**
**Cincinnati, Ohio.**

STARRETT
TOOLS
THE L.S. STARRETT CO.
ATHOL MASS. U.S.A.

Inspecting Pistons
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Company

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# Starrett Tools
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He never takes a chance. A piston, for instance, has to be *right* to a fraction of a thousandth.

In repair work it is often necessary to maintain the same standards of accuracy as in the factory. The difference is that you must be your own inspector. Make accuracy easy and certain just as the inspectors did by using Starrett Tools.

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**The World's Greatest Toolmakers**
**ATHOL, MASS.**

42-702

# The ACCESSORY and GARAGE JOURNAL

Devoted Exclusively to the Automobile Trade and Allied Interests.

VOL. VII. PAWTUCKET, R. I., JULY 1917 No. 3

# NATIONAL AUTOMOBILE DEALERS

## Association Organized at Chicago By Distributors of Motor Vehicles—Prospective Membership More than 28,000

The National Automobile Dealers' Association was formed in Chicago at a convention of dealers attended by car agents and distributors from all over the country. There were about 150 present, representing many of the largest local dealers' organizations in America, and after a two days' session the organization was whipped into shape, not, however, before many details were thrashed out in stormy debate. The organization will be nation wide in its scope and it is expected that it will ultimately include practically all of the 28,000 odd dealers in the country.

A divisional plan of organization was decided on, the association being composed of sectional organizations, which in turn are composed of state, county and city organizations. To be eligible for membership one must first be a member of one of these local organizations of dealers. The dues are $10 a year.

George W. Browne, the Overland distributor in Wisconsin, who went to Washington recently to fight the proposed five per cent. tax on all new automobiles, was elected president of the association. He is one of the best known men in the trade in the northwest and was one of the founders and first president of the Milwaukee Dealers' Association.

The first vice president is John H. MacAlman of Boston, Mass., who has been president of the Boston Automobile Dealers' Association for over 14 years. Mr. MacAlman, who handles the Stearns car in Boston, is one of the best known dealers in the East.

Other officers of the organization are: Second vice president, F. W. A. Vesper, St. Louis, Mo.; treasurer, Thomas J. Hay, Chicago; secretary, Bart J. Ruddle, Milwaukee.

Directors—East and South, John H. Johnson, Boston; A. E. Maltby, Philadelphia; George D. McCutcheon, Atlanta. Central West, W. G. Tennant, Chicago; John A. Graham, Minneapolis; C. A. Forester, Cleveland. Far West, P. E. Chamberlin, Denver; P. H. Greer, Los Angeles; Dean Schooler, Des Moines. The directors will also appoint one vice president from each state.

For the present the energies of the association will be devoted to perfecting the organization, after which it will take up all matters pertinent to the interests of the members, including legislative and trade matters.

Following is a list of the delegates who were present and participated in the organization of the association:

**A**

H. M. Allison, Chicago; E. M. Alling, Rochester; H. A. Amerman, Urbana, Ill.; W. P. Abbey, Minneapolis; L. W. Arnoldy, Minneapolis.

**B**

J. M. Bloch, Indianapolis; Christ Blunt, Iowa Falls, Ia.; Charles E. Baker, Detroit; Theo. Bass, Peoria; R. E. Beede, Davenport, Ia.; L. M. Browne, Minneapolis; John J. Bell, Pittsburgh; H. W. Bonnell, Milwaukee; H. A. Bonnell, Newark, N. J.; A. L. Brice, Minneapolis; George W. Browne, Minneapolis; John L. Brock, Trenton, N. J.; B. C. Buxton, Chicago; W. J. Boone, Chicago; T. D. Beard, Chicago; H. P. Branstetter, Chicago.

**C**

P. E. Chamberlin, Denver; Charles W. Collier, Green Bay, Wis.; E. T. Conlon, Grand Rapids; A. F. Chase, Minneapolis; Fred H. Caley, Cleveland; H. B. Chandler, Portland, Me.; C. I. Campbell, Boston.

**D**

A. H. Davis, Duluth; J. J. De Jarnette, Sioux City; C. L. Davis, Milwaukee; J. F. Davis, Chicago; C. D. Dashiell, Chicago; H. E. Doty, Chicago.

**E**

A. Eckstein, Milwaukee; Wm. Eggleston, Minneapolis; F. J. Edwards, Milwaukee.

**F**

L. H. Filiatrault, Duluth; R. E. Fair, Kalamazoo; T. F. Fitzpatrick, Utica, N. Y.; L. D. Flint, Milwaukee.

**G**

R. C. Greenlease, Kansas City; John J. Gibson, Buffalo, N. Y.; P. H. Greer, Los Angeles; A. R. Gustofs, Rock Island, Ill.; Erwin Greer, Chicago; Harry T. Gardner, Syracuse.

**H**

R. D. Humphry, Minneapolis; F. E. Harkness, Oklahoma City; W. J. Hughey, Chicago; S. H. Hancock, Eau Claire, Wis.; Thomas J. Hay, Chicago; J. H. Hurrly, St. Loud, Minn.

**I**

Wm. Ilgenfritz, York, Pa.; W. H. Imes, Topeka.

**J**

John H. Johnson, Boston; E. W. Jordan, Milwaukee; A. E. Jordan, Milwaukee; John S. Johnson, Minneapolis.

**K**

E. H. Kerstetter, Grand Rapids; R. F. Kaehler, Richmond, Va.; A. R. Kidd, Milwaukee; H. B. Knudson, Duluth; W. F. Kneip, Baltimore; W. Kidd, Milwaukee.

**L**

John W. Lee, Jr., Syracuse; Robert E. Lee, St. Louis; Einar Lee, Minneapolis; G. W. Lewis, Minneapolis; Thomas J. Mason, Jacksonville, Fla.; Charles F. Monroe, Buffalo; Harvey E. Mack, Minneapolis; F. E. Murphy, Minneapolis; A. E. Maltby, Philadelphia; P. T. Mitchell, Chicago; John H. MacAlman, Boston; A. J. March, Milwaukee; W. C. Moore, Minneapolis; L. A. McKay, Minneapolis; W. H. L. McCourtie, Minneapolis; T. C. McMillan, Milwaukee.

**N**

C. C. Nye, Des Moines; Harry Newman, Chicago.

**O**

N. E. Osmond, Milwaukee; O. C. Owen, Chicago.

**P**

E. E. Peake, Kansas City; A. N. Payseno, Minneapolis; W. P. Pierce, Providence; F. F. Price, Columbus; H. B. Pinkerton, Peoria.

**R**

C. R. Reilly, Minneapolis; Al. Reeke, Milwaukee; W. A. Rafter, Minneapolis; A. M. Robbins, Chicago; Bart J. Ruddle, Milwaukee; F. C. Rulon, Chicago.

**S**

Edward Sanford, Minneapolis; F. R. Sanderson, Nashville; Ray W. Sherman, New York; Jesse A. Smith, Milwaukee; William F. Sanger, Milwaukee; Edgar F. Sanger, Milwaukee; H. J. Syaebler, Chicago; A. N. Schrueder, Chicago; R. C. Smith, Minneapolis; Gardner Smith, Davenport, Ia.; R. B. Simming, Minneapolis; W. R. Schiller, Utica; Charles E. Sager, Rochester; E. V. Stratton, Albany; H. H. Shuart, Detroit; Fuller J. Stafford, Duluth; Harvey O. Sloane, Minneapolis; L. V. Sherwood, Springfield, Mo.; Dean Schooler, Des Moines.

**T**

W. B. Taylor, Rockford, Ill.; O. P. Tyler, Worcester, Mass.; J. C. Thorpe, Urbana, Ill.; Charles W. Tway, Atlanta, Ga.; W. G. Tennant, Chicago.

**U**

R. E. Umphries, Springfield, Mo.

**V**

A. A. Van Dyke, St. Paul; F. E. A. Vesper, St. Louis, Mo.

**W**

D. Wittenberg, Milwaukee; B. M. Wylie, Indianapolis; Fred. B. Whitcomb, Minneapolis; F. E. Wing, Boston; D. E. Whipple, Chicago; G. A. Will, Minneapolis; F. P. Wood, Minneapolis; W. R. Wilmot. Minneapolis; Prince Wells, Louisville.

**Y**

Fred R. Young, Moline, Ia.; O. L. Yellott, Baltimore.

# *Tractor Demonstration Aug. 6 in Nebraska*

### Long List of Exhibitors of Motor Farm Equipment and Accessories.

The large number of entries for the big tractor demonstration at Fremont, Neb., indicate that it will be the largest ever held in the world and enormous crowds are anticipated throughout the week of Aug. 6-10.

Demonstrations of all kinds will be given with the tractors, including the plowing of 3000 acres. Various machines will plow from three to seven hours daily.

As the demonstration will be the only one this year recognized by the National Power Farming Demonstration, the attendance is expected to exceed the quarter million mark. The following is a list of the tractor exhibitors to date: Allis-Chalmers Co., Milwaukee, Wis.; Advance-Rumeley Co., LaPorte, Ind.; Albaugh-Dover Mfg. Co., Chicago; Albert Lea Tractor Co., Albert Lea, Minn.; Aultman-Taylor Co., Mansfield, O.; Avery Co., Peoria, Ill.; B. F. Avery & Sons, Louisville, Ky.; Big Four Drive Co., Big Rapids, Mich.; C. L. Best Co., San Leandro, Cal.; Bull Tractor Co., Minneapolis; Bullock Tractor Co., Chicago; J. I. Case Plow Works, Racine, Wis.; Case Threshing Machine Co., Racine, Wis.; Cleveland Motor Plow Co., Cleveland, O.; C. O. D. Tractor Co., Minneapolis, Minn.; Dauch Mfg. Co., Sandusky, O.; Electric Wheel Co., Quincy, Ill.; Elgin Tractor Co., Elgin, Ill.; Emerson-Brantingham Implement Co., Rockford, Ill.; Gile Tractor and Engine Co., Ludington, Mich.; Gray Tractor Co., Minneapolis, Minn.; La Crosse Tractor Co., La Crosse; Hart-Parr Co., Charles City, Ia.; Holt Mfg. Co., Peoria, Ill.; Huber Mfg. Co., Marion, O.; International Harvester Co., Chicago, Ill.; Interstate Tractor Co., Waterloo, Ia.; Janesville Machine Co., Janesville, Wis.; Joliet Oil Tractor Co., Joliet, Ill.; Kinnard-Haines Co., Minneapolis, Minn.; Kardell Tractor Co., St. Louis, Mo.; John Lauson Tractor Co., New Holstein, Wis.; Dunham Co., Berea, O.; Hoke Tractor Co., Washington, Ind.; Lyons-Atlas Co., Indianapolis, Ind.; Minneapolis Steel and Machinery Co., Minneapolis, Minn.; Moline Plow Co., Moline, Ill.; Nilson Tractor Co., Minneapolis, Minn.; Peoria Tractor Co., Peoria, Ill.; Pioneer Tractor Co., Winona, Minn.; Rock Island Plow Co., Rock Island, Ill.; Russell & Co., Massilon, O.; Newell-Sanders Co., Chattanooga, Tenn.; Simplex Tractor Co., Minneapolis, Minn.; Wallace Tractor Co., Racine, Wis.; Waterloo Gas Engine Co., Waterloo, Ia.; Roderick Lean Mfg. Co., Mansfield, O.

Following is a list of the exhibitors of accessories: Buda Motor Co., Harvey, Ill.; Byrne Kingston Co., Kokomo, Ind.; Champion Spark Plugs Co., Toledo, O.; Climax Engineering Co., Clinton, Ia.; Diamond Chain Co., Indianapolis; Eisemann Magneto Co., New York; Balso Oil Co., Toledo, O.; Hyatt Roller Bearing Co., Chicago, Ill.; Keystone Lubricating Co., Chicago, Ill.; Maltby Auto Specialty Co., Detroit; Sumter Electrical Co., Chicago, Ill.; Standard Oil Co., Omaha, Neb.; Vacuum Oil Co., New York; Waukesha Motor Co., Waukesha; Timken Roller Bearing Co., Canton, O.

### CORRECTIONS TO ORPHAN CARS DIRECTORY.

By error we regret the Levene Motor Company of Philadelphia was listed in the last issue of the Accessory and Garage Journal as handling repair parts for the American and Herreshoff cars, now sold by the American Motors Parts Co., Indianapolis, Ind., and the De Tamble Motors Company of Anderson, Ind., as selling parts for the De Tamble cars. The American Motors Parts Company of Indianapolis, we are now informed, purchased the stock and service business of the De Tamble Company, including their rights to sell De Tamble parts.

Under the Knox car the name of the Knox Motors Associates, Springfield, Mass., was unintentionally omitted. The Knox Motors Associates has a stock of Knox parts at the factory for the pleasure cars and trucks which they are no longer manufacturing amounting to somewhere about $120,000, and ship parts to New York City, where they have in stock some $60,000 worth of parts with Chadick-Delamater. The Knox Motors Associates supplies one of the service companies mentioned in the list and states that most prompt service can be furnished from the Knox factory and from Chadick-Delamater.

The Abbott Corp., Cleveland, O., desires the dealers and owners of Abbott cars to know that the Abbott automobile is not, and never was an orphan car. They are manufacturers and distributors of parts for Abbott cars made prior to reorganization and they continue supplying regular authorized dealers and distributors throughout the country with Abbott parts, and in case it is inconvenient to reach an Abbott dealer, owner's requirements are taken care of direct.

# *R. H. Collins Heads The Cadillac Company*

### Former General Motors Company Man Succeeds the Lelands in Management of Big Concern.

Richard H. Collins, formerly assistant to President Durant of the General Motors Company, has been elected president and general manager of the Cadillac Motor Car Company, to succeed the Lelands, who resigned to engage in airplane manufacture.

# *Ford Accessories National Show is Planned*

### Big Exposition Will Be Held in Chicago Coliseum Latter Part of September.

Incorporated under the name of the National Exposition for Ford Accessories, arrangements have been made to hold a show in the Chicago Coliseum Sept. 22-29, which will be devoted exclusively to the display and demonstration of accessories, equipment and attachments for the Ford car.

The management has already been assured of upwards of 250 exhibitors of accessories and attachments who will occupy all the main floor of the Coliseum.

Officers of the National Exposition for Ford Accessories, Inc., are: President, J. E. Duffield, treasurer and general manager of the Bailey Non-Stall Differential Corp., Chicago; first vice president, Charles Johnson, general manager of the Maltby Auto Specialty Co., Detroit; second vice president, H. S. Irving, vice president of the Advance Automobile Accessories Corp., Chicago; secretary, W. Ralph, manager of Newsabout Fords, Chicago; treasurer, B. L. Gray, president Gray-Heath Company, Chicago; general manager, H. V. Buelow, Toledo, O.

Mr. Buelow, who has his plans for the exposition well under way, is well known as a promoter and manager of motor and other shows.

Most of the prominent accessory manufacturers in the country have already taken space in the show, including the following: Ahlberg Bearing Co., Chicago; Bill Automatic Spark Retarders, La Porte, Ind.; Crum-Wiley, Peru, Ind.; Advance Auto Accessories Corp., Chicago; Automatic Safety Tire Valve Co., Detroit, Mich.; Ton-A-Ford Truck Company, Racine, Wis.; Detroit Auto Products Co., Detroit, Mich.; Bailey Non-Stall Differential Corp., Chicago; Maltby Auto Specialty Co., Detroit; Gray-Heath Co., Chicago; Sinclair Refining Co., Chicago; Wire Wheel Corp. of America, Buffalo, N. Y.; Simplex Mfg. Co., Anderson, Ind.; Graham Bros., Evansville, Ind.; The Zinke Co., Chicago; Reliance Co., Chicago; H. G. Paro Co., Chicago; Perry Auto Lock Co., Chicago; Essenkay Products Co., Chicago; Mechanical Belt Co., St. Joseph, Mo.; Grant Wire Wheel Co. and K-D Lamp Co., Cincinnati, O.

### CORRECTION.

The Princess 4-36, made by the Princess Motor Car Corp., Detroit, Mich., is sold $825 f. o. b. on all models, instead of $775 as incorrectly priced in the June issue of this magazine. In further correction it needs be said that the Princess uses the Disco two-unit starting and lighting system, instead of the Delco, as stated, and tires 32x3½ inches.

# LIST OF ACCESSORY JOBBERS

**Official list compiled by the National Association of Automobile Accessory Jobbers. Symbol * indicates members of the association. Those marked *, together with the list of Associate Members following, constitute the complete membership of the association.**

### ALABAMA.

*Johnson Tire Co............Montgomery
Moore-Handley Hdw. Co....Birmingham

### ARKANSAS.

Rose-Lyon Hardware Co.....Little Rock

### CALIFORNIA.

*Auto Tire Co..................San Diego
Beckley-Ralston Co.......San Francisco
*Chanslor & Lyon Co.......San Francisco
*Chanslor & Lyon Co..........Los Angeles
*Chanslor & Lyon Co.............Fresno
*Chanslor & Lyon Co............Oakland
*Campbell-Collins Co............San Jose
Day & Co., E. J...............Oakland
Dunham, Carrigan & Hayden Co.
........................San Francisco
*Electric Appliance Co.....San Francisco
*Featherstone, E. A..........Los Angeles
*Gavin-Williams Co............San Diego
Kimball-Upson Co............Sacramento
*Lathan Auto Supply Co...San Francisco
*McCoy Motor Supply Co..San Francisco
Pacific Hdw. & Steel Co...San Francisco
Remick Co., James S........Sacramento
Union Hdw. & Metal Co.....Los Angeles
*Winstock-Nichols Co......San Francisco
*Western Rub. & Supply Co..Los Angeles
Waterhouse-Lester Co......Los Angeles
Waterhouse-Lester Co.............Oakland
Waterhouse-Lester Co.....San Francisco
Western Heavy Hdw. & Iron Co.Oakland

### COLORADO.

*Auto Equipment Co.............Denver
*Denver Auto Goods Co...........Denver
*Foster Auto Supply Co...........Denver
*B. K. Sweeney Electrical Co.....Denver
Quinn & McGill Motor Supply Co..Denver

### CONNECTICUT.

Horton, Henry..............New Haven
*Mersick & Co., C. S...........New Haven
*Post & Lester Co.............Hartford
*Post & Lester Co............Bridgeport
*Post & Lester Co...........New Haven
*Post & Lester Co..........New London
*Post & Lester Co............Waterbury

### DISTRICT OF COLUMBIA.

*Miller Brothers Auto & Supply
House ................Washington
*National Electric Supply Co..Washington
*Rubel & Co., Charles.......Washington

### FLORIDA.

*Baughaman Co., G. Norman......Tampa
*Greene Co., C. W..................Tampa

### GEORGIA.

*Alexander-Seward Co............Atlanta
*Elyea-Austell Co..................Atlanta
Parmalee Co., S. S.................Macon

### ILLINOIS.

*Automobile Supply Co..........Chicago
Beckley-Ralston Co..............Chicago
Butler Brothers....................Chicago
*Chicago Automobile Sup. House..Chicago
*Collins Co., E. B................Danville
*Electric Appliance Co...........Chicago
*Graham-Selzer Co..................Peoria
*Hine-Watt Mfg. Co...............Chicago
Hibbard, Spencer, Bartlett Co....Chicago
*Kimball & Co., E. D..............Chicago
*Motor Equipment Co..............Chicago
*Motor Car Supply Co..............Chicago
*National Electric & Auto Sup. Co..Peoria
*Reid Motor Supply Co............Quincy
Tenk Hardware Co.................Quincy
Western Electric Co...............Chicago

### INDIANA.

Central Rubber & Sup. Co...Indianapolis
*Doherty Sheerin & Co......Indianapolis
*Gibson Co.....................Indianapolis
Hearsey Co., H. T...........Indianapolis
*Holliday & Co., W. J........Indianapolis
*Orr Iron Co....................Evansville
*Van Camp Hdw. & Iron Co..Indianapolis
Wheeler Co., W. R..........Indianapolis

### IOWA.

Central Automobile Sup. Co..Des Moines
*Fitch Co., R. F. & W. B......Oskaloosa
*Hippee States Co............Des Moines
*Repass Auto Co..................Waterloo
*Schultz Auto Supply Co......Sioux City
*Sieg Co..........................Davenport
Sioux City Iron Co..............Sioux City
*Warnock Co., William........Sioux City

### KANSAS.

*Auto Supply & Tire Co.........Wichita
*Auto Supply Co., The........Hutchinson
Blish, Mize & Sillman..........Atchison
Colladay Hardware Co.......Hutchinson
*Hagberg Automobile Sup. Co.....Wichita
Harwi Hardware Co., A. J......Atchison
Lee Hardware Co....................Salina
*Price Auto Equipment Co...........Wichita
*Southwick Auto Supply Co.......Topeka
*Shattuck-George Iron Co........Wichita
Thompson Hardware Co., W. A. L.
.......................................Topeka

### KENTUCKY.

Belknap Hdw. & Mfg. Co......Louisville
*Cowan & Co., Andrew........Louisville
Harbison & Cathright Co......Louisville
*Louisville Auto Supply Co....Louisville
*Warner Co., Roy E...........Louisville

### LOUISIANA.

*Electric Appliance Co......New Orleans
*Interstate Electric Co.......New Orleans
Lee Hardware Co...........Shreveport
*Shuler Rubber & Sup. Co..New Orleans

### MAINE.

*Bragg & Sons, N. H.............Bangor
Bailey Co., James..............Portland
Cleveland & Co., L. W..........Portland
Darling Automobile Co..........Auburn
Rice & Miller.....................Bangor

### MARYLAND.

*Auto Supply Co................Baltimore
Coggins & Owen...............Baltimore
Norris & Sons, R. W...........Baltimore

### MASSACHUSETTS.

American Motor Equipment Co..Boston
Balston & Goulding Co.......Worcester
Bigelow & Dowse Co............Boston
*Boice-Perrine Co.................Boston
*Butts-Ordway Co.................Boston
Decatur & Hopkins Co...........Boston
Iver Johnson Sporting Goods Co..Boston
Iver Johnson Sport. Goods Co..Fitchburg
Iver Johnson Sport. Goods Co..Worcester
*Linscott Supply Co...............Boston
Motor Car Equipment Co.........Boston
*Post & Lester Co.................Boston
*Post & Lester Co.............Springfield
*Post & Lester Co..............Worcester
*Tarbell-Watters Co...........Springfield
U. S. Rubber Co...................Boston
*Wetmore-Savage Co..............Boston

### MICHIGAN.

*Automobile Supply Co...........Detroit
*Automobile Equipment Co.......Detroit
*Becker Auto Co...........Grand Rapids
*Bowman Co., E. A................Detroit
Buhl Sons..........................Detroit
*Cumings Brothers....................Flint
*General Sales Co..................Detroit
Michigan Tire & Accessories Co.
.........................Grand Rapids
Morley Bros......................Saginaw
*Roehm & Davison................Detroit
Hall Co., Sherwood........Grand Rapids
Saginaw Hardware Co............Saginaw
Stamdart Brothers.................Detroit
*Tisch Auto Supply Co.....Grand Rapids

### MINNESOTA.

*Electric Mfg. Co.................St. Paul
Empire Tire & Rubber Co..Minneapolis
Farwell, Ozmun Kirk Co.........St. Paul
Hardenberg, P. R. L..............St. Paul
Hudson & Thurber Co......Minneapolis
Hackett, Gates & Hurty.........St. Paul
Janney-Semple-Hill Co......Minneapolis
Kelly-How-Thompson Co.........Duluth
*Minneapolis Iron Store Co..Minneapolis
Marshall-Wells Hardware Co.....Duluth
*Nicols, Dean & Gregg...........St. Paul
Nott Co., W. C...............Minneapolis
Plant Rubber Co..............Minneapolis
*Reinhard Brothers Co.......Minneapolis
Scheffer & Rossum Co...........St. Paul
*Sommers & Co., G................St. Paul
*Smith & Co., C. J..................St. Paul
*Western Motor Sup. Co.....Minneapolis
*Williams Hardware Co......Minneapolis

### MISSOURI

*Beck & Corbitt Iron Co.........St. Louis
*Bonniwell-Calvin Iron Co...Kansas City
*Campbell Auto Sup. Co., Fred..St. Louis
Campbell Iron Co.................St. Louis
*Equipment Co................Kansas City
*Farmer Auto Supply Co......St. Joseph
*Celler, Ward & Hanser Hdw. Co.
..................................St. Louis
*Kansas City Auto Sup. Co...Kansas City
Joplin Supply Co......................Joplin
*Missouri Auto Specialty Co.....St. Louis
*Motor & Machinists Sup. Co..Kansas City
*Phoenix Auto Supply Co.......St. Louis
Richards & Conover Hdw. Co.
..............................Kansas City
Sligo Iron Store Co...............St. Louis
Shapleigh Hardware Co...........St. Louis
Simmons Hardware Co...........St. Louis
Sickles Saddlery Co...............St. Louis
*Straus Saddlery Co...............St. Louis
Wyeth Hardware Co..........St. Joseph
Townsley Metal & Hdw. Co..Kansas City

### MONTANA.

*Northwestern Auto Sup. Co., The.Billings

### NEBRASKA.

*Korsmeyer Co., The.............Lincoln
Lee-Colt Andreesen Hdw. Co.....Omaha
*Master Sales Co..................Omaha
*Nebraska-Buick Auto Co.........Lincoln
Omaha Rubber Co..................Omaha
*Powell Supply Co.................Omaha
*Paxton & Gallagher..............Omaha
*Paxton & Gallagher.............Auburn
*U. S. Auto Supply Co.............Omaha
*Western Automobile Supply Co..Omaha
Wright & Wilhelmy Co..........Omaha

### NEW JERSEY.

*Economy Auto Supply Co........Newark
Motor Car Equipment Co........Newark
Thompson-Reilly Co...............Newark

### NEW YORK.

Albany Hardware & Iron Co......Albany
Auto Hdw. & Equipment Co...New York
*Bindrim, Julius................Brooklyn
Barker, Rose & Clinton Co......Elmira
*Davis-Browne Electric Co.........Ithaca
*Lowe Motor Supply Co........New York
Motor Car Equipment Co....New York
Martin-Evans Co.................Brooklyn
Marshall Co., A. H..............Plattsburg
Meyers Hdw. Co., M. P......Plattsburg
McRae & Co., H. A............Glen Falls
Olmstead Co., The..............Syracuse
*Picard & Co., A. J..............New York
*Pruden Hdw. Co., W. E......New York
*Rickard Co., Jay A.........Schenectady
Roby Co., S. B...................Rochester
Straus & Co., Joseph............Buffalo
Thompson, H. D..................Malone
U. S. Rubber Co................Rochester
U. S. Rubber Co.................Syracuse
U. S. Rubber Co....................Buffalo
*Utica Cycle & Supply Co...........Utica
*Van Benschoten, John.....Poughkeepsie
*Whittemore-Sim Co...........New York

### NEVADA.

Nevada Auto Supply Co............Reno

### NORTH CAROLINA.

*Carolinas Auto Supply House..Charlotte

### NORTH DAKOTA.

*Grant, J. D...........................Fargo

### OHIO.

Bingham Co., W.................Cleveland
Bostwick & Braun..................Toledo
Canton Hardware..................Canton
*Cooper Rubber Co., J. J......Cincinnati
*C. & D. Auto Supply Co......Cincinnati
*Dine-De Wees Co..................Canton
*Fen Far Co.......................Cleveland
*Griswold-Sohl Co................Columbus
Hardware Supply Co................Akron
Lockwood-Luetkemeyer-Henry Co.
..................................Cleveland
*M. & M. Co.......................Cleveland
*Ohio Rubber Co.................Cincinnati
*Pennsylvania Rubber Sup. Co..Cleveland
*Justis & Parker Co..............Columbus
*Roberts-Toledo Auto Co..........Toledo
*Schroyer & Co., G. W............Dayton
Stanbaugh-Thompson Co....Youngstown
*Toledo Rubber Co...................Toledo
*Toledo Tire and Supply Co........Toledo
*Toewater & Co., G. M........Cincinnati
*Union Supply Co....................Toledo
Worthington Co., George......Cleveland

### OKLAHOMA.

*Burwell-Smith Sup Co...Oklahoma City
*Burwell Supply Co., J. B..Oklahoma City
*Ratcliff-Sanders Grocer Co........Tulsa
Richards & Conover Hardware Co.
.......................Oklahoma City
Severin Tire and Sup. Co..Oklahoma City

### OREGON.

Archer-Wiggins Co.............Portland
*Ballou & Wright...................Portland
*Chanslor & Lyon Co............Portland
Marshall-Wells Hdw. Co.......Portland

### PENNSYLVANIA.

| | |
|---|---|
| *Beers Brothers Co | Oil City |
| *Berrodin Rubber Co | Philadelphia |
| *Cahall Motor Supply Co | Philadelphia |
| Doubleday-Hill Electric Co | Pittsburgh |
| *Dyke Motor Supply Co | Pittsburgh |
| Fry Keyser | Reading |
| *Gaul, Derr & Shearer Co | Philadelphia |
| *Hillard & Yokes | Erie |
| *Jackson Motor Supply Co | Pittsburgh |
| *Johnstown Automobile Co | Johnstown |
| *Lansing Hardware Co | Scranton |
| Logan & Gregg Hdw. Co | Pittsburgh |
| *Manufacturers Supplies Co | Philadelphia |
| *McCullough & Son, J. B | Philadelphia |
| Miller-Ecrot Co | Philadelphia |
| Nock Co., George W | Philadelphia |
| *Pittsburgh Auto Equip. Co | Pittsburgh |
| *Roberts Electric Supply Co., H. C. | Philadelphia |
| Supplee-Biddle Co | Philadelphia |
| U. S. Rubber Co | Philadelphia |
| *Woodwell Co., Joseph | Pittsburgh |

### RHODE ISLAND.

| | |
|---|---|
| *Belcher & Loomis Hdw. Co | Providence |
| *Goodby-Rankin Co | Providence |
| *Post & Lester Co | Providence |
| *Providence Auto Equip. Co | Providence |
| *Waite Auto Supply Co | Providence |

### SOUTH CAROLINA.

| | |
|---|---|
| *Alderman, Jr., D. W | Florence |
| Bailey-Lebby Co | Charleston |
| *Cameron & Barkley Co | Charleston |
| *Francke & Co., C. D | Charleston |

### SOUTH DAKOTA.

| | |
|---|---|
| *Brownell Co., H. F | Sioux Falls |
| Dakota Iron Store | Sioux Falls |
| L. & L. Motor Supply Co | Sioux Falls |
| *Paxton & Gallagher Co | Deadwood |

### TENNESSEE.

| | |
|---|---|
| Gray & Dudley Hdw. Co | Nashville |
| *Osburn Automobile Sup. Co | Memphis |
| *Southern Auto Supply Co | Chattanooga |

### TEXAS.

| | |
|---|---|
| *Borderland Auto Supply Co | El Paso |
| *Electric Appliance Co | Dallas |
| *Ferris-Dunlap Auto Supply Co | Dallas |
| *Fiske Co. of Texas | Dallas |
| Frank Saddlery Co., L | San Antonio |
| *General Auto Supply Co | Amarillo |
| *Hawkins Auto Sup. Co., G. W | Houston |
| Krakauer, Zork, Moyes Co | El Paso |
| Meyer Co., Joseph F | Houston |
| Peden Iron and Steel Co | Houston |
| Peden Iron and Steel Co | San Antonio |
| *Spencer-Carroll Co | Waco |
| Tri-State Motor Co | El Paso |
| Walter Tips Co | Austin |
| Western Motor Supply Co | El Paso |

### UTAH.

| | |
|---|---|
| *Capital Electric Co | Salt Lake City |
| *Intermountain Electric Co | Salt Lake City |
| Salt Lake Hardware Co | Salt Lake City |

### VERMONT.

| | |
|---|---|
| Hagar Hdw. & Paint Co | Burlington |

### VIRGINIA.

| | |
|---|---|
| *Chemi Co | Richmond |
| *Crump Co., B. T | Richmond |
| Meadows-Price Co | Roanoke |
| *Piedmont Hardware Co | Danville |
| *Talman Auto Supply Co | Richmond |

### WASHINGTON.

| | |
|---|---|
| *Automobile Supply Co | Tacoma |
| *Ballou & Wright | Seattle |
| *Chanslor & Lyon | Seattle |
| *Chanslor & Lyon | Spokane |
| *Chanslor & Lyon | Tacoma |
| Child, Day & Churchill Co | Spokane |
| Holly-Mason Hardware Co | Spokane |
| Marshall-Wells Hardware Co | Seattle |
| Marshall-Wells Hardware Co | Spokane |
| Seattle Hardware Co | Seattle |
| Spokane Cycle & Supply Co | Spokane |
| Whiton Hardware Co | Seattle |

### WEST VIRGINIA.

| | |
|---|---|
| *Williams Hardware Co | Clarksburg |

### WISCONSIN.

| | |
|---|---|
| *Andrae & Sons Co., Julius | Milwaukee |
| Auto Supply Co | Milwaukee |
| *Cross Hardware Co., Phillip | Milwaukee |
| *Morley-Murphy Hardware Co | Green Bay |
| Pritzlaff Hdw. Co., John | Milwaukee |
| *Shadbolt & Boyd Iron Co | Milwaukee |
| U. S. Rubber Co | Milwaukee |
| *Western Motor Supply Co | Milwaukee |

### WYOMING.

| | |
|---|---|
| *Paxton & Gallagher Co | Cheyenne |

### CANADA.

| | |
|---|---|
| *Canadian-Fairbanks Morse Co | Montreal |
| *Cutten & Foster | Toronto |
| *Hyslop Bros | Toronto |
| Marshall-Wells Co | Winnipeg |
| *Mullen & Sons, Ltd., John | Montreal |
| *Motor Car Supply Co | Galgary |
| *Petrie of Montreal, H. W., Ltd | Montreal |
| *Western Motor Sup., Ltd | Regina, Sask. |

## *Associate Members*

### COLORADO.

| | |
|---|---|
| Colorado Tire & Leather Co | Denver |

### CONNECTICUT.

| | |
|---|---|
| Clover Mfg. Co | Norwalk |
| Connecticut Tel. & Electric Co | Meriden |
| Fitzgerald Mfg. Co | Torrington |
| Hall-Thompson | Hartford |
| Raybestos Co | Bridgeport |
| Rowe Calk Co | Hartford |

### ILLINOIS.

| | |
|---|---|
| Atlas Auto Supply Co | Chicago |
| Advance Felt Spec. & Cutting Co | Chicago |
| Atlas Specialty Mfg. Co | Chicago |
| American Electric Co | Chicago |
| Bailey Non-Stall Differential Corp | Chicago |
| Browne & Caine | Chicago |
| Chicago Fuse Mfg. Co | Chicago |
| Edelman & Co., E | Chicago |
| Findeisen & Kropt Mfg. Co | Chicago |
| Federal Miniature Lamp Div. of General Electric Co | Chicago |
| Gardner Governor Co | Quincy |
| Halladay Co., L. P | Streator |
| Illinois Brass Mfg. Co | Chicago |
| Imperial Brass Mfg. Co | Chicago |
| Jefferson Electric Mfg. Co | Chicago |
| Metal Spec. Mfg. Co | Chicago |
| Mayo-Skinner Mfg. Co | Chicago |
| Nelson Mfg. Co., A | Chicago |
| Niehoff & Co., Paul G | Chicago |
| Premier Electric Co | Chicago |
| Peoria Overhead Washer Co | Peoria |
| Rhodes & Co., Jas. J | Chicago |
| Stanwood Equipment | Chicago |
| Sunderland Mfg. Co | Chicago |
| Tuthill Spring Co | Chicago |
| U. S. Ball Bearing Mfg. Co | Chicago |
| Van Cleef Brothers | Chicago |
| Victor Mfg. & Gasket Co | Chicago |
| Warner Lenz Co | Chicago |
| Weaver Mfg. Co | Springfield |
| Weidenhoff, Jos. H | Chicago |

### INDIANA.

| | |
|---|---|
| Double Fabric Tire Co | Auburn |
| Crum-Wiley Co | Peru |
| Gates Mfg. Co | Indianapolis |
| H. & D. Co | Goodland |
| Indiana Lamp Co | Connersville |
| Oakes Co., The | Indianapolis |
| Wheeler-Schebler Carb. Co | Indianapolis |

### IOWA.

| | |
|---|---|
| C. & E. Mfg. Co | Marshalltown |
| Davenport Mfg. Co | Davenport |

### KANSAS.

| | |
|---|---|
| Crum Mfg. Co | Ottawa |

### MASSACHUSETTS.

| | |
|---|---|
| Gray & Davis Inc | Boston |
| Hill-Smith Metal Goods Co | Boston |
| Mossberg Co., Frank | Attleboro |
| Motor Specialties Co | Waltham |
| Standard Woven Fabric Co | Walpole |
| Walden Worcester Co | Worcester |
| Wonder-Mist Co | Boston |

### MICHIGAN.

| | |
|---|---|
| Edmunds & Jones Corp | Detroit |
| Hayes Mfg. Co | Detroit |
| Lockwood, Ash Motor Co | Jackson |
| New Era Spring & Specialty Co | Detroit |
| National Standard Co | Niles |
| Piston Ring Co | Muskegon |
| Sparks-Withington Co | Jackson |
| White Star Refining Co | Detroit |

### MINNESOTA.

| | |
|---|---|
| Durkee-Atwood Co | Minneapolis |

### MISSOURI.

| | |
|---|---|
| Apex Mfg. Co | St. Louis |
| Carter Carburetor Co | St. Louis |
| Curtis Pneumatic Mch. Co | St. Louis |
| McQuay-Norris Mfg. Co | St. Louis |
| Nu-Back Mfg. Co | St. Louis |
| Pull-U-Out Sales Co | St. Louis |
| Shurnuff Mfg. Co | St. Louis |

### NEBRASKA.

| | |
|---|---|
| Haney & Co., J. H | Hastings |

### NEW JERSEY.

| | |
|---|---|
| Asbestos & Rub. Works of N. J | Camden |
| Endurance Tire and Rubber Co. | New Brunswick |
| Hartford Co., Edw. V., Inc | Jersey City |
| Klaxon Co | Newark |
| Rajah Auto Supply Co | Bloomfield |
| Splitdorf Electrical Co | Newark |
| Tingley & Co., Charles O | Rahway |
| Thermoid Rubber Co | Trenton |
| Voorhees Rubber Co | Jersey City |
| Whitehouse-LeCompte Mfg. Co | Newark |

### NEW YORK.

| | |
|---|---|
| American Ever Ready Works | L. I. City |
| Brunner Mfg. Co | Utica |
| Benford Mfg. Co | Mt. Vernon |
| Corning Glass Works | Corning |
| Crescent Tool Co | Jamestown |
| E. A. Laboratories Co | Brooklyn |
| Empire China Works | Brooklyn |
| Grossman Mfg. Corp., Emil | Brooklyn |
| Herz & Co | New York |
| Indian Refining Co | New York |
| John-Manville Co., H. W | New York |
| Judd & Leland Mfg. Co | Clifton Springs |
| Kellogg Mfg. Co | Rochester |
| Keyless Auto Clock Co | New York |
| Laminated Shim Co | New York |
| Livingston Radiator & Mfg. Co | New York |
| Mosler & Co., A. R | Mt. Vernon |
| Metal Stamping Co | L. I. City |
| Motormeter Co | New York |
| Manhattan Electrical Sup. Co | New York |
| Manzel Brothers Co | Buffalo |
| N. Y. & N. J. Lubricant Co | New York |
| West Side Foundry Co | Troy |
| Piel Co., G | L. I. City |
| Platt & Washburn Refining Co | New York |
| Schlesinger-Redburn Corp | New York |
| Sears-Cross Co | Brooklyn |
| Stevens & Co | New York |
| U. S. Light & Heat Corp | Niagara Falls |
| Wolverine Lubricants Co | New York |

### OHIO.

| | |
|---|---|
| Au-To Compressor Co | Wilmington |
| Adamson Mfg. Co | East Palestine |
| Ashland Mfg. Co | Ashland |
| Brown Spring Oiler Co | Cleveland |
| Champion Spark Plug Co | Toledo |
| Central Brass & Fixture Co | Springfield |
| Caskey-Dupree Mfg. Co | Marietta |
| Columbus Varnish Co | Columbus |
| Corcoran-Victor Co | Cincinnati |
| Dall Motor Parts Co | Vermillion |
| Davies-Young Soap Co | Dayton |
| Firestone Tire and Rubber Co | Akron |
| Globe Machine & Stamping Co | Cleveland |
| General Tire & Rubber Co | Akron |
| Gordon Co., J. P | Columbus |
| Heinze Co., John O | Springfield |
| Hoover Co., W. H | New Berlin |
| Jiffy-Jack Co | Cleveland |
| K-W Ignition Co | Cleveland |
| Lawson Co., F. H | Cincinnati |
| McGraw Tire & Rubber Co | East Palestine |
| Marvel Accessories Mfg. Co | Cleveland |
| Northwestern Chemical Co | Marietta |
| National Carbon Co | Cleveland |
| National Motor Supply Co | Painesville |
| Peters & Herron Dash Co | Columbus |
| Packard Electric Co | Warren |
| Perkins-Campbell Co | Cincinnati |
| Reflex Ignition Co | Cleveland |
| Sharp Spark Plug Co | Cleveland |
| Standard Parts Co | Cleveland |
| Sterling Mfg. Co | Cleveland |
| Temco Electric Motor Co | Leipsic |
| Victor Corcoran Co | Springfield |
| Vital Mfg. Co | Cleveland |
| Vichek Tool Co | Cleveland |

### PENNSYLVANIA.

| | |
|---|---|
| American Bronze Co | Berwyn |
| Atwater Kent Mfg. Works | Philadelphia |
| Crew-Levick Co | Philadelphia |
| Commercial Lubricating Co | Philadelphia |
| Goodrich-Lenhart Mfg. Co | Philadelphia |
| Silvex Co | South Bethlehem |
| Standard Steel Box Co | Bridgeville |

### RHODE ISLAND.

| | |
|---|---|
| Auto Parts Co | Providence |

### SOUTH CAROLINA.

| | |
|---|---|
| General Asbestos & Rub. Wks. | Charleston |

### TENNESSEE.

| | |
|---|---|
| American Lava Co | Chattanooga |
| Continental Piston Ring Co | Memphis |

### WASHINGTON.

| | |
|---|---|
| Romort Mfg. Co | Seattle |

### WISCONSIN.

| | |
|---|---|
| American Brass Foundry Co | Milwaukee |
| Auto Parts Mfg. Co | Milwaukee |
| Federal Rubber Mfg. Co | Milwaukee |
| Fulton Rubber Mfg. Co | Milwaukee |
| Gemco Mfg. Co | Milwaukee |
| Higgins Spring & Axle Co | Racine |
| Harvey Spring & Forging Co | Racine |
| Milwaukee Auto Engine & Supply Co | Milwaukee |
| Shaler Co., C. A | Waupun |
| Walker Mfg. Co | Racine |

### CANADA.

| | |
|---|---|
| Champion Spark Plug of Canada. | Windsor, Ont. |

# *Set Prices Inimical to Used Car Business*

## Values Should Be Maintained on All Cars in Accordance With Their Condition and the Amount of Service They Are Capable of Rendering

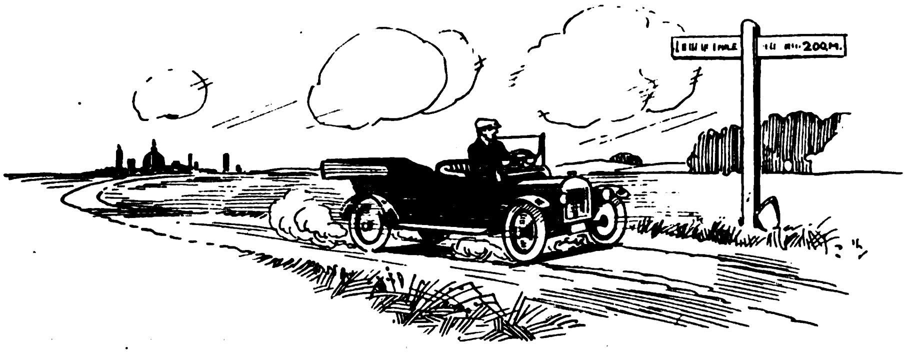
**(Reprinted from The Automobile Journal.)**

THE Automobile Journal and the Accessory and Garage Journal believe that the tendency to set an established price on used cars is a factor that will do more to retard the automobile business and to handicap the interests of the manufacturer and his representatives wherever located than the havoc possible from a submarine fleet cut loose in New York harbor.

With the exception of a very few manufacturers of pleasure cars, or, as they may more properly be termed in the light of their great services to these times—passenger cars, the other manufacturers, to conserve and protect their welfare, should discourage any individual or body bent on placing a set price on any make or model of vehicle which they produce.

It is one surprising fact that any rule that would tie down legitimate business to the extent of 80 per cent. of its volume should be allowed to run amuck, practically unchallenged, in so important a phase of commerce as the automobile trade for 24 hours, let alone a period of months.

No two cars depreciate equally. Too much depends upon the use that they have had, the care they have had, what still remains in them for service—especially in these days when new utilities for the motor car crop up over night. Instead of dodging the issue it is plain to be seen that with sound business principles only put into the used car transaction the new car business will, as it ought, proceed smoothly on its own base.



**The Motorist Will Travel Far to Get the Used Car He Wants and Drive It Home Cheerfully.**

We object to a fixed price on a certain make of car of a certain year because it is against the best interests of new car owners and used car owners; because it smothers the dealer and repairer and handicaps the manufacturer.

No stronger evidence is found of how large this problem looms up on the business horizon than in the fact that in all the big cities there are thousands of used cars on the market constantly. In Boston alone there are in the neighborhood of 2000 cars advertised for sale every Sunday in the newspapers, or about 10 for every automobile dealer in that city. A similar situation obtains in New York City and in the smaller New England cities it is of proportionate magnitude. Why should not dealers sell all of these cars?

The Automobile Journal and Accessory and Garage Journal contend that the real remedy lies in the hands of dealers and manufacturers and consists of educating the public to the fact that there is actual worth and service in the majority of used cars, in this way establishing a demand market for them. The Automobile Journal and Accessory and Garage Journal, with their combined issues of 60,000 copies, lead in this campaign of education.

Every dealer should make an earnest effort to handle his used cars in a practical manner and develop a market in his home territory.

SPEEDSTER
MANUFACTURING COMPANY
MANAGERS OFFICE

**Agencies Want a Car Which Commands a Good Used Car Price.**

The manufacturer should promote and conduct a campaign to demonstrate the actual service life of his products as a means of protecting owners, dealers and prospective buyers when new cars are marketed, resold or traded.

There are thousands of owners today driving cars that were purchased second hand, and they are giving good service and satisfaction. If these facts were more generally known, there would be thousands of additional customers for used cars and it would open up an avenue of distribution to relieve the present congestion in the used car market.

The territory for the resale of used cars is not restricted to the city or town where it comes onto the vehicle market. Because of the fact that the automobile is a commodity which is deliverable a long distance upon its own wheels and moved by its own power, practically any local market now has a radius of 100, 200 to 300 miles.

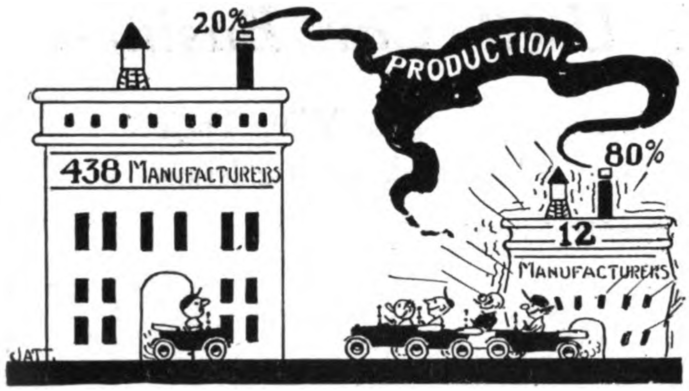
Under present expansive conditions, if 100 per cent. of exchange cars were resold in the same spot where they are taken in trade, overhauled and offered for resale, this would not mean that 100 per cent. of them would thereafter be rolling about over the same streets where they rolled under the guidance of their previous owners.

The car buyer will travel 200 miles cheerfully to get the used car he wants, especially when it is born in mind that he can make the return journey inside his purchase, if he wishes to.

General business conditions naturally create more of a de-

COMMERCIAL CLUB · BULLETIN ·
DO BUSINESS LOCALLY
LOCAL · DEALER
ACCESSORY AND REPAIRS
TIRE VULC

**Business Men Are Inclined to Stick to the Local Field.**



**Twelve Manufacturers Make 80 Per Cent. of the Cars and the Other Odd 238 Makers Turn Out Only 20 Per Cent.**

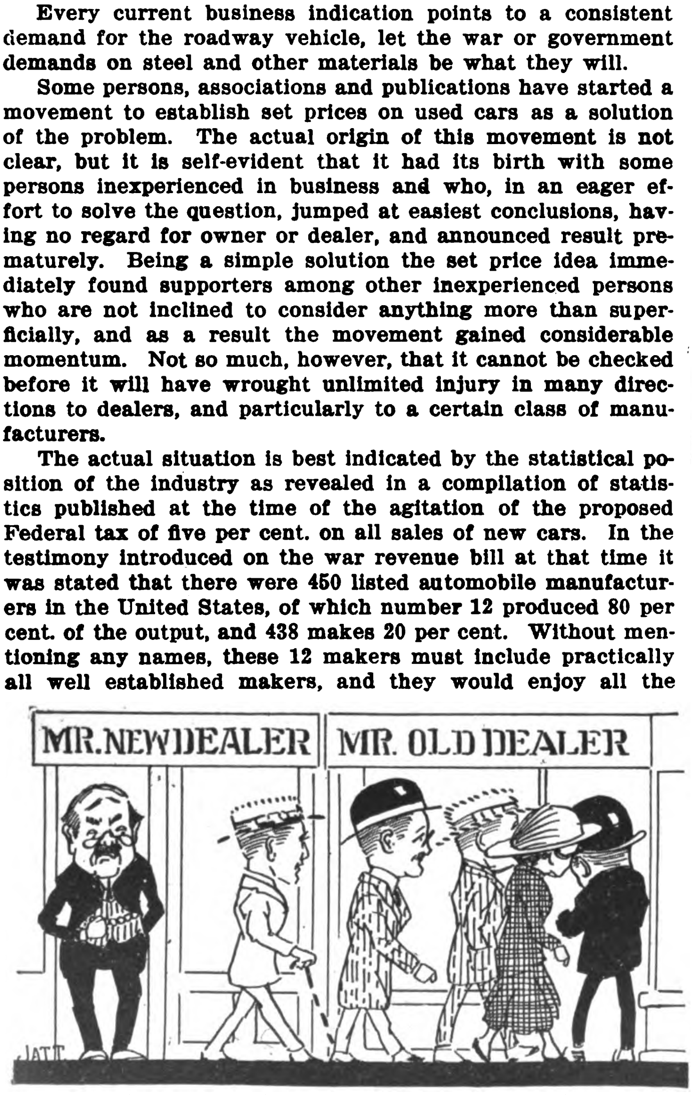
mand for used cars, and when demand is greater a better price is expected of them, although the country has war on its hands.

Considering the splendid values which have been put into automobiles made in the past few years, strong, capable machines, largely fitted with standardized parts, the used car proposition was never more attractive to a prospective buyer than it is now. The used car demand grows daily of its own momentum. How much more then would it not expand were the combined efforts of the manufacturer and dealer put behind it to make it grow, instead of wedges being inserted between them to pry them further apart, as is the natural effect of the proposition to foist set prices on used cars on this false basis.

Every current business indication points to a consistent demand for the roadway vehicle, let the war or government demands on steel and other materials be what they will.

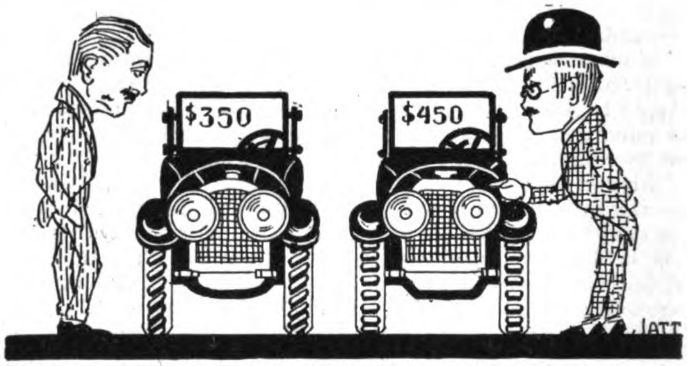
Some persons, associations and publications have started a movement to establish set prices on used cars as a solution of the problem. The actual origin of this movement is not clear, but it is self-evident that it had its birth with some persons inexperienced in business and who, in an eager effort to solve the question, jumped at easiest conclusions, having no regard for owner or dealer, and announced result prematurely. Being a simple solution the set price idea immediately found supporters among other inexperienced persons who are not inclined to consider anything more than superficially, and as a result the movement gained considerable momentum. Not so much, however, that it cannot be checked before it will have wrought unlimited injury in many directions to dealers, and particularly to a certain class of manufacturers.

The actual situation is best indicated by the statistical position of the industry as revealed in a compilation of statistics published at the time of the agitation of the proposed Federal tax of five per cent. on all sales of new cars. In the testimony introduced on the war revenue bill at that time it was stated that there were 450 listed automobile manufacturers in the United States, of which number 12 produced 80 per cent. of the output, and 438 makes 20 per cent. Without mentioning any names, these 12 makers must include practically all well established makers, and they would enjoy all the benefits, if any, to be derived from general adoption of a price schedule on used cars, to the detriment of the best interests of the other 80 per cent. in the business.

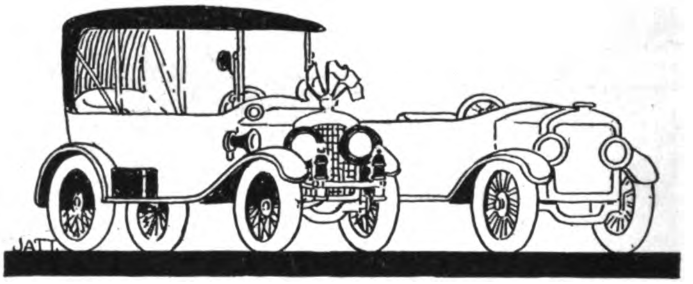


**Mr. Newdealer Seems Helpless Against Advantage Held by Competitor, Whose Car Has Larger Second Hand Value.**

For example, let the case be supposed of a representative of one of the makers in the 80 per cent. category, who goes out to seek a new dealer. He finds one and is on the point of closing with him when the latter discovers that the second hand value of the car that is offered to him to distribute is less than 50 per cent. at the end of the first year. Unless the sales manager is exceptionally clever he cannot fasten the agency on that dealer, as the latter knows that he must be placed at a disadvantage the moment he takes on a car which shows a greater depreciation after a year's use then is shown by a competitive car in the same price class. If, however, the dealer is new in the business, he might take on the car, whereupon his agency proves not a good one for the manufacturer, as he finds it difficult to sell the experienced car user a machine that depreciates in value over 50 per cent. at the end of the first year. He loses many customers and his field is necessarily limited, as it is now an established fact that about 80 per cent. of new car purchases are made by persons who are already owners. In other words, the agent representing the makers of 80 per cent. of cars produced has actually an open field of only 20 per cent. of the car purchasers in the event of a schedule of set prices being established, as proposed, thereby establishing a scale of depreciation that favors the popular car that has been on the market for years.



**With Component Parts Almost Identical a Prospect Is Mystified at the Wide Variation in Price.**



**Some Owners Dress Their Cars Up With All the Fixin's, While Others Turn Them in Stripped of Every Accessory.**

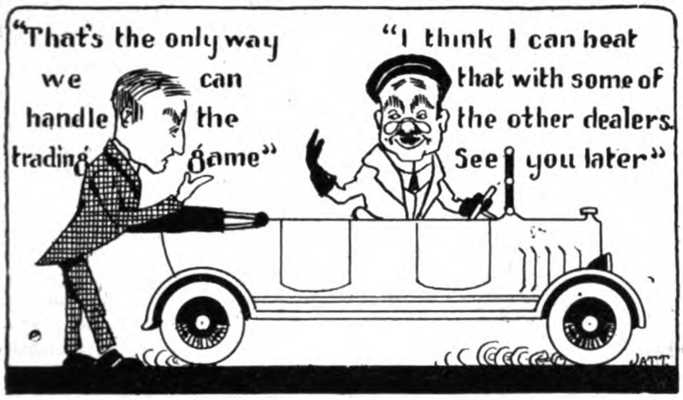
Just why such discrimination should exist is difficult to understand in view of the conditions obtaining generally in the manufacturing end of the business and the high degree of standardization that exists in the making of cars.

When these conditions are explained to the prospective buyer by the agent selling the car that is less well known, the latter has difficulty in understanding why such a situation exists and may thus be influenced in favor of the car made by the manufacturer in the 12 per cent. section.

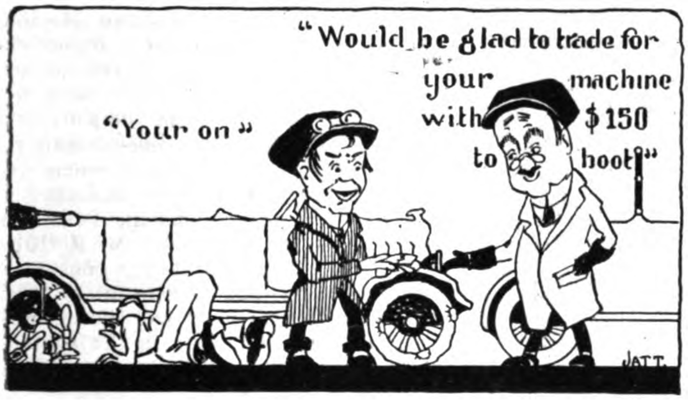
On the other hand, take the purchaser of the car that has a low resale price at the end of the year. He goes to his dealer to dicker for a new car and offers his old one in exchange. It cost $1000 originally and the dealer says he could allow him but $450 for it in exchange. If the owner is any kind of a business man the offer immediately strikes him as preposterous. That his car, which will continue to give good service under average conditions for five years to come, having, therefore, actually depreciated only 16.66 per cent. in service value, has dropped 55 per cent. in market value, is beyond his comprehension. The new deal, in nine cases out of 10, is called off on this account and the owner is apt to be found using his car through several more years before he again returns as a prospect for a new one. As a result, although the market is relieved of one more second hand car, there is one less new car disposed of, and it is certain that repeated blockades of this kind are not conducive to healthy, progressive, active business.

It is difficult for the dealer to arrange an amicable agreement under such conditions, as he is not in the position of the dealer who handles the car on which a 35 to 40 per cent. depreciation has been fixed for the first year; and he also finds in many cases that the other dealer will offer his customer more for his second hand car in trade for the competitive make than he could afford.

The second hand market has no great central exchange such as they have for metals, wools, cottons and other products of the soil, but a fair criterion of values is found in the press, where thousands of advertisements appear daily. There are few bids for cars, it is true, appearing in the press, but the offering prices are quite close to the actual market, as the dealers are in close competition and cannot afford to keep their money tied up any longer than necessary. Hence it results that they place their selling prices at, or as near as possible, the actual market figure dictated by the demand.


"That's the only way we can handle the trading game"
"I think I can beat that with some of the other dealers. See you later"
JATT

Better No Deal Than a Poor Deal.

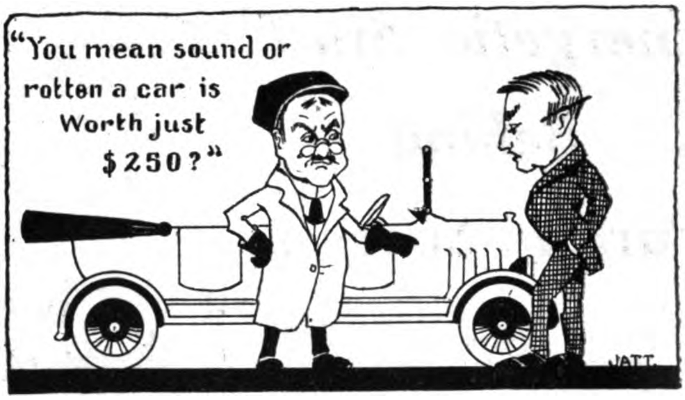

"Would be glad to trade for your machine with $150 to boot"
"Your on"
JATT

Discovers an Easy Trade on the Curb.

What does the investigator find in this great market established through these sales? Not that all automobiles of the same make and model are selling at the same price, but a wide discrepancy in price, due to the fact that both individual owners and dealers recognize that second hand values in cars, resting largely upon the condition of the cars, fix their offering prices accordingly. There must be a reason for owners to advertise and sell their cars

There appears much wisdom in so doing, as a merchant could not expect a customer to come and pay the same price for a car that had been driven 25,000 miles as he would for one that had been driven only 5000 miles, all other things being equal and the former having a better top or better looking exterior.

A study of the classified advertisements in the big dailies in the eastern cities immediately convinces one of the futility of the fixed price idea. Dozens of instances can be found wherein two cars of the same make, model, year and apparently the same condition, are advertised at prices varying from 50 to over 100 per cent. These offerings are not alone from owners, but also from dealers, and dealers who make a specialty of second hand cars.


"You mean sound or rotten a car is Worth just $250?"
JATT

Set Price Trade in Value Amazes Mr. Customer.

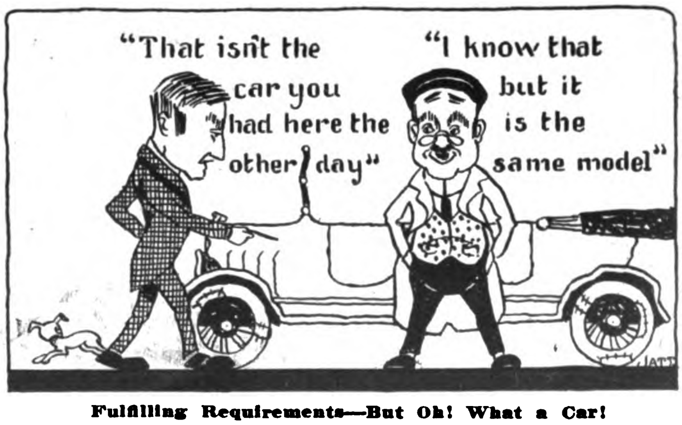
Cases are also found where dealers will make a blanket offer of a dozen or more cars of different makes at so much each. It is also noticed from week to week in cases where dealers and organizations attempt to maintain a fixed price on their offers, that the same cars are continually offered, with only a few absent, that would indicate the sale of any.

The dealer or trader who fails to reckon with his customers in striking a bargain over a used car is getting into deep water, as the proposition is unlike that in which a new car is the subject of the deal. The latter has a market price fixed by the manufacturer and is sold at that price throughout the country, but the used car value is immediately affected by supply and demand.

Say for instance that a man goes to a deal to secure a new car and has an old one that originally cost him $1200. The car is in good condition and the customer knows it because he has taken special care of it and has not driven the average number of miles for a car of its age. The dealer, guided by the theory that all cars of a certain year of the same make and model should have approximately the same resale value, looks up his data on this subject and makes an offer of $250 for the customer's old car to be applied on the price of a new one.

The ordinary business man with average intelligence, who kept posted, would immediately reflect upon such an offer and would set his mind on either making the dealer allow him more for the car or would find another means of making up the difference. As there is more or less of a fraternity among owners of the same make of cars in a neighborhood, he would soon seek out some motorist who had a car of the same make and model as his own, but one that had been driven from two to three times as many miles as his own and one which had received little attention or care. The owner of this latter car, having received perfect satisfaction from his machine, but realizing that he had taken a good deal more out of its serviceability than the one offered in trade for the payment of $150 additional, would in most cases be glad to close the deal.

The first mentioned customer would now have $150 in cash, the same make and model of car and would return to the dealer to close the deal for a new car. If the dealer had the courage of his convictions he would be obliged to accept.


"That isn't the car you had here the other day"
"I know that but it is the same model"
JATT

Fulfilling Requirements—But Oh! What a Car!

# *Energetic Staff Behind Puritan Success*

**Spacious Factory of Modern Construction, Main Plant of the Puritan Machine Co., Detroit, Mich., Makers of All Parts for All Cars.**

THERE has grown up about the great automobile industry, many dependent and supplementary lines of manufacture, a number of which have developed into great enterprises, but few hold as distinctive and unique a position as the Puritan Machine Company of Detroit, Mich., a large industry within itself and the outgrowth of failures and other discontinuances in the automobile business.

One of the first men to recognize the fact that a new opportunity had been created by the automobile industry in a special line, was A. O. Dunk, who at the time was conducting a small machine shop in Detroit. He talked with friends in the industry as to the possibilities of engaging in a business to supply parts for orphaned cars and became convinced that he was working along the right road, a conviction in which he has since been strongly vindicated by the growth of the Puritan Machine Company from a small machine shop to a four-story building, with 100,000 feet of floor space and additional warehouse capacity, making a total of 300,000 square feet. At the same time his organization grew from one composed of a few men to a force of several hundred employees.

Over 100 defunct automobile companies have been purchased in the past few years, including in most instances drawings, tools, jigs, dies, etc., and other facilities to enable the Puritan company to continue the manufacture and distribution of all parts of the cars. In fact, the parts for a large number of cars can now be obtained only through the Puritan Machine Company, including, according to the Puritan lists, the Cartercar, Krit, Speedwell, Michigan, Warren, R. C. H., Everitt, Elmore, Crescent and Ohio. In addition to these, parts are also kept in stock or manufactured by the company for the Aerocar, Anhut, Barnes, California, Carhartt, Century, Clark, Clark-Carter, Cutting, Dart, De Luxe, Demot, F. A. L. Car, Grabowsky, Havers, Henderson, Marion, Marquette, Northern, Omaha, Owen, Queen, Rainier, Reliable, Dayton, Scripps-Booth Cycle Cars, Stoddard-Dayton, Welch Pontiac, Welch-Detroit, Wayne and many others.

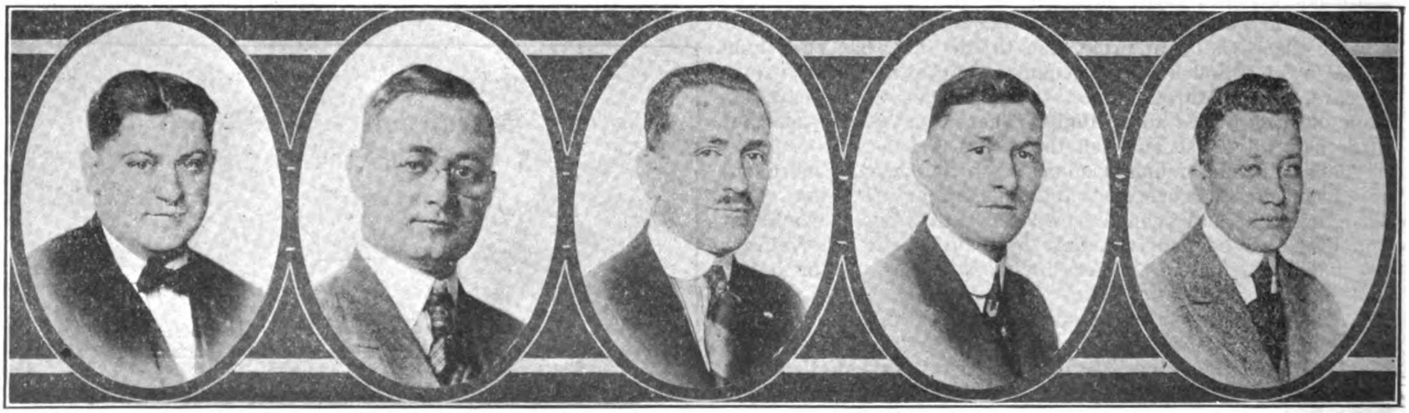
**A O. Dunk, President of the Puritan Machine Co., Detroit, Mich.**

The demand for parts for these cars is so large that the firm's mail order business is now one of the largest of its kind in the country, and a large business is also done through the accessory store that is operated for the accommodation of motorists in the Detroit territory.

With the rapid growth of the company it became necessary to expand several years ago and the Puritan Machine Company was incorporated under the laws of Michigan with a capital and surplus of several hundred thousand dollars. The officers of the company are: President, A. O. Dunk; general manager and treasurer, H. G. Gremel; secretary, O. R. Taylor; service sales manager, E. W. Hawley; superintendent, Paul Gersick; advertising manager, M. R. Hilts.

General Manager Gremel is considered one of the best posted men in the country on orphan car parts and has been associated with Mr. Dunk in the development of the Puritan enterprise since its inception.

The secretary of the company, Oscar R. Taylor, joined the company several years ago, and his efforts have been largely responsible for the big growth



**Staff of the Puritan Machine Co., Detroit, Mich.—Left to Right: H. G. Gremel, General Manager and Treasurer; Oscar R. Taylor, Secretary; E. W. Hawley, Service Sales Manager; P. J. Gersick, General Superintendent; M. R. Hilts, Advertising Manager.**

in the mail order business in the United States and foreign countries. For many years he was an executive with the Port Huron Engine and Thresher Company, Port Huron, Mich. He resigned to accept an executive post with the General Motors Company, which position he held until joining the Puritan organization.

E. W. Hawley, previous to his connection as service sales manager of the Puritan company, which position he took three years ago, was connected with the service departments of several of the largest automobile companies in Detroit.

The general superintendent, P. J. Gersick, was service manager of the Krit Motor Car Company before that company ceased business, and prior to that time was with the Packard Motor Car Company and other large concerns. He joined the Puritan organization a year ago, taking charge of the stock rooms.

M. R. Hilts, advertising manager of the Puritan, is the youngest member of the Dunk organization. Although only 22 years old, Mr. Hilts entered advertising several years ago and has been connected with the Oakland Motor Car and Paige-Detroit Motor Car companies in their advertising departments.

### THE COZY TRAILER OUTFIT.

The best part of the camping season is nearly at hand and the really satisfactory way to take a vacation, if one is fortunate enough to own an automobile, is with the machine. The Cozy Trailer Outfit is, as the name implies, a complete camping outfit, packed for haulage on a trailer, designed to be applied to the rear of the automobile and so arranged that it may be left at one point and side trips taken with the automobile unencumbered with camping equipment. It has a number of attractive features. The canopy top, which is held up by a collapsible arrangement, occupies small packing space, yet is roomy when set up. The outfit is equipped with an ice box, a locker drawer for cooking utensils and various other compartments. The arrangement of the compartments is ingenious, for they are always accessible and a noon day meal may be prepared without disturbing the rest of the outfit or setting up camp. The whole outfit may be set up without the necessity of driving stakes or using guy ropes.

**Manufactured by Cozy Trailer and Equipment Co., 42-44 Kentucky Ave., Indianapolis, Ind. Write for booklet and prices.**

# TRADE INFORMATION EXCHANGE

## A National Clearing House for the Trade's Needs

### ELECTRIC PLEASURE CARS.

**Newark, N. J;** E. C. Schmidt, 238 Central Ave., is anxious to secure an electric pleasure car agency; selling price, $250 to $5000.

### GASOLINE COMMERCIAL CARS.

**Los Angeles, Cal.;** H. G. Pendell, 1239 Figueroa St., is in the market for gasoline commercial cars; selling price, $500 to $5000.

### SPECIAL OPPORTUNITY.

**New York, N. Y.;** International Resident Buyers, 33 Union square, are interested in behalf of one of their customers in placing an order for the following cars: Ford, Cadillac and Stutz racing car.

### ACCESSORIES AND EQUIPMENT.

**Los Angeles, Cal.;** H. G. Pendell, 1239 So. Figueroa St., is in the market for belts, cloth (overalls), clutches, lamps, magnetos (Berling), paints, pistons (3½x2¾x5, Continental N), searchlights (gas) and special bodies for commercial cars.

**Lawrence, Mass.;** Charles J. Burgess, M. D., 37 Whitman St., is interested in air compressors, air pumps, anvils, brushes, bulbs, bumpers, carbide, carburetors, celluloid, cements, chains, dimmers, fire extinguishers, gaskets, goggles, graphite, headlights, heaters, horns, hose, hydrometers, jacks, lamps, greases, lubricators, odometers, oils, packing, patches, plugs, polishes, printed matter, pumps, reflectors, removers (carbon), scrapers, searchlights, shock absorbers, soaps, speedometers, tape, terminals, tire accessories, tires, tools, trunks, tubing, vises, voltmeters, vulcanizers, washers, washstands, waste, whistles, windshields, wrenches.

**Newark, N. J.;** E. C. Schmidt, 228 Central Ave., would like to secure special bodies for pleasure cars.

**Jersey City, N. J.;** Superior Garage, 132 Charles St., is interested in air compressors, air pumps, bolts, brakes, bulbs, bumpers, cabinets, cable, cans, cases, chains, charging apparatus, dimmers, drills, fans, fire extinguishers, furnaces, gasoline, gauges, goggles, graphite, greases, grinders, guards, guns, headlights, heaters, horns, hose, hydrometers, ignition, indicators, injectors, jacks, lamps, lathes, lubricators, machinery, magnetos, maps, nuts, oils, packing, paints, pens, patches, pedals, pins, pistons, platinum, plugs, polishes, printed matter, pullers, pumps, radiators, ratchet drills, removers (carbon), screws, shock absorbers, soaps, sockets, solder, speedometers, springs, starters, steering wheels, storage systems, switchboards, switches, tanks, tape, terminals, testers, timers, tire accessories, tires, tools, transmissions, tubing, valves, vaporizers, varnishes, ventilators, vises, vulcanizers, washers, washstands, waste, wearing apparel, windshields, wire, wrenches.

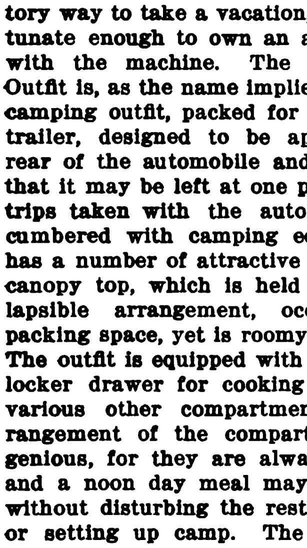
**New York, N. Y.;** Jacob Bashem, 376-84 West 213th St., is desirous of securing air compressors, air pumps, anti-rattlers, anvils, arbor presses, asbestos, autogenous welding equipment, axles, banding, batteries, bearings, belts, bodies, boilers, bolts, brakes, brushes, bulbs, bumpers, burners, cabinets, cable, camshafts, cans, caps, carbide, carburetors, cases, castings, celluloid, cements, chains, charging apparatus, chemical tanks, clamps, clips, cloth, clutches, coils, collars, commutators, cones, connectors, controllers, couplings, cranes, cups, curtains, cutters, cushions, cylinder machines, cylinders, dashes, dimmers, discs, doors, drills, drums, dynamometers, dynamos, elevators, emblems, engines, fans, fasteners, fenders, fire extinguishers, forgings, frames, furnaces, gaskets, gasoline, gauges, gear cutting machines, gears, generators, glass, goggles, graphite, grinders, guards, greases, guns, hammers, headlights, heaters, hoists, holders, horns, hose, hubs, hydrometers, ignition, indicators, injectors, jacks, jigs, joints, knuckles, lamps, lathes, leather, levers, locks, lubricators, machinery, magnetos, maps, mechanical starters, metal parts, meters, measuring instruments, molds and cores, motor controllers, motors, mufflers, nuts, odometers, packing, paints, pans, patches, pedals, pinions, platinum, plugs, polishes, presses, primers, printed matter, pullers, pulleys, pumps, punches, purifiers, oils, races, racks, radiators, ratchet drills, recording time clocks, reamers, rectifiers, reflectors, regulators, removers (carbon), rests, rheostats, rims, rods, rubber, scrapers, screws, searchlights, seats, separators, shafting, shapers, shims, shock absorbers, soaps, sockets, solder, speedometers, spokes, springs, stampings, starters, steel, steering wheels, steps, storage systems, strainers, switchboards, switches, tanks, tape, terminals, testers, timers, tire accessories, tires, tools, tops and parts, transmissions, trimmings, trunks, tubing, turntables, upholstery, valves, vaporizers, varnishes, ventilators, vises, voltmeters, vulcanizers, washers, washstands, waste, wearing apparel, wheels, whistles, windshields, wire, wrenches and special bodies for pleasure and commercial cars. The goods are to be used for sale and repair.

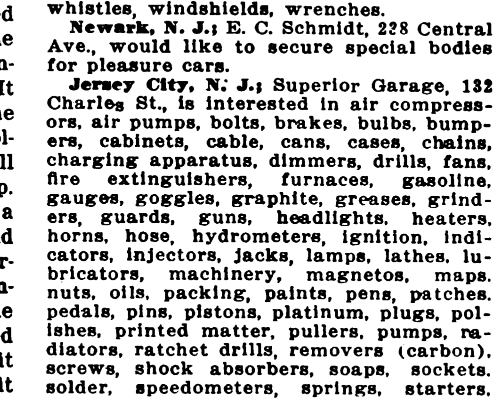
**Cleveland, O.;** Cleveland Automobile School, 2340 Euclid Ave., would like to secure carburetors, charging apparatus, chemical tanks, coils, cones, cylinder machines, dynamometers, elevators, engines, generators, glass, heaters, hoists, ignition, indicators, magnetos, maps, mechanical starters, presses, rectifiers, removers (carbon), rims, shapers, starters, wrenches.

### EUREKA GRINDING COMPOUND.

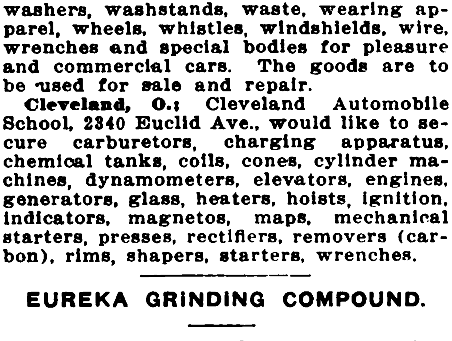
One of the standard products that has been proved by time is known as the Eureka valve grinding compound. This compound is made to be safely used on any gasoline engine and the choice of three grades is given: Fine, medium or coarse. It is put up in one-pound can, which is of the compression type, absolutely air tight. This product is constantly growing more popular with discriminating manufacturers, engineers, garage dealers and repair men.

**Distributed by J. H. Faw, Inc., 41 Warren St., N. Y. City. Write for prices.**





The Cozy Tent and Trailer Outfit.



Eureka Grinding Compound.

# Activities of Prominent Men of the Industry

## Resignations, Promotions and Other Changes in Personnel of Motor Vehicle Manufacturing and Merchandising Companies and Allied Businesses

Frederick Wright, Director in Charge of Production of the Permalife Storage Battery Co., Poughkeepsie, N. Y.

**Frederick Wright**, one of the best known men in storage battery circles, has become connected with the Permalife Storage Battery Co., Inc., Poughkeepsie, N. Y., and will have direct supervision of the manufacture of Permalife batteries in the modern plant recently acquired through the consolidation of Permalife and the W. L. Battery Co. of Poughkeepsie. Mr. Wright, who is the inventor of the first nonsulphating battery placed on the market, has been connected with several well known battery concerns. He has been perfecting some of his inventions lately.

**M. W. Hanks** has resigned as manager of the Chicago branch of the automobile department of the Westinghouse Electric and Mfg. Co. He has taken up the standardization work with the Society of Automotive Engineers. The Westinghouse company has decided to handle this work from the Indianapolis office under H. S. Johnson.

**L. W. Santasiere** has been appointed a foreign traveler for the Firestone Tire and Rubber Co. He will sail for the West Indies, where he will do general sales promotion work.

**A. H. Collins** has incorporated the Wolverine Motors, Inc., in Kalamazoo, Mich. He was formerly of the R. C. H. and Locomobile. He is president and general manager of the company which will build special cars ranging around $3000.

**Ralph D. Mock** has been elected a director of the American Motors Corp., Plainfield, N. J. He is treasurer of the Hydraulic Pressed Steel Co., Cleveland, O. Louis Chevrolet, vice president of the American Motors Corp., reports that cars are being turned out at a rate of four a day and that business is good with the distributors. The company is developing a two-passenger sporting body in addition to the four-passenger roadster which is now ready.

**Berry Rockwell** is now general sales manager of the Smith Motor Truck Corp., Chicago. His post includes the direction of sales of both the parent company and its subsidiaries. Mr. Rockwell is well known to the automobile industry, having been Maxwell-Briscoe and U. S. Motor Co. advertising manager.

**D. McCall White** has joined the General Motors organization. He was formerly chief engineer for the Cadillac Motor Car Co. Mr. White will be located in the General Motors offices at Bush and Congress streets, Detroit.

**E. M. Newald** has been appointed assistant sales manager to George McIntyre of the Commonwealth Finance Corp. He brings a thorough knowledge of his duties to his new connection, having been manager of new business in the Chicago office of the Guaranty Banking Corp., the western subsidiary of the Guaranty Securities Corp.

**St. Clair Couzens** is now director of sales and advertising for the Olympian Motors Co., Pontiac, Mich. Before entering the automobile industry, 10 years ago, he was a newspaper man and made an enviable record as sales promoter for one of the large manufacturing companies.

**Edward S. Babcox**, advertising manager of the Firestone Tire and Rubber Co., was elected vice president of the Association of National Advertisers at the recent meeting of the association in Detroit.

**L. J. Myers** has been appointed sales manager of the Amazon Rubber Co., Akron, O. He is well known in the trade, having been with the sales and credit department of another Akron tire company. The Amazon Rubber Co. has opened an office at 2176 Broadway, New York City, for the purpose of carrying a stock from which to supply their eastern dealers. Owen Moynihan, eastern district manager, is in charge of this office.

**Fred Cardway** has been appointed manager of the export department of the Packard Motor Car Co. The export department of the Packard company has been reorganized, with attentions devoted to export business in South America, Africa, Australia and the far East. Mr. Cardway last winter made a trip to South America and established Packard dealerships in Rio de Janeiro, Buenos Aires and Montevideo.

**Eugene Prince**, factory representative of Willys-Overland, Inc., in Russia, has temporarily severed his connections with the company to join the diplomatic mission at Petrograd, which is headed by Elihu Root.

**Paul A. Smith** is now general manager of the Overland Automobile Co. He was formerly district sales manager for the west central district. Before joining the Willys-Overland company Mr. Smith was sales manager of the Detroit Steel Products Co.

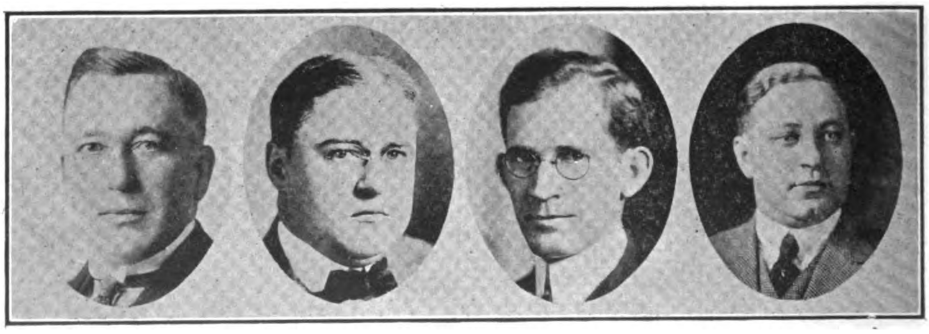
**Malcolm MacKinnon** was appointed manager of the newly organized Touring Club of America at a meeting held at the new headquarters of the T. C. A. of the Chicago Automobile Club.

**Lafayette Markle** has resigned as president of the L. Markle Co. of Chicago to assume his new position as vice president and assistant general manager of the Republic Motor Truck Co.

**R. J. Doty** has severed his connections with the Johnson company, Spuyten Duyvil, N. Y., where he was for the last 3½ years in charge of the steel foundry. Mr. Doty will be associated with the Sivyer Steel Casting Co., Milwaukee, Wis. This company is enlarging its plant and installing an additional three-ton electric furnace to take care of its growing business among the motor truck, tractor and general machinery manufacturers.

**S. J. Green** has received the appointment of sales manager of the Detroit Battery Co., Detroit, Mich.

**G. E. Toole**, formerly production manager of the Champion Motors Co. of Ful-



Left to Right—St. Clair Couzens, Director of Sales and Advertising, Olympian Motors Co., Pontiac, Mich.; Edward S. Babcox, Advertising Manager Firestone Tire and Rubber Co.; L. J. Myers, New Sales Manager Amazon Rubber Co.; S. J. Green, Sales Manager Detroit Battery Co., Detroit, Mich.

ton, Ill., has been appointed to take charge of the service organization of the Wetmore-Quinn Co.

**H. R. Keeling** has been appointed advertising manager of the Haynes Automobile Co. of Kokomo, Ind. Mr. Keeling was formerly with the Armstrong Cork Co., Pittsburg, Pa.

**Clarence Schneider** has been appointed superintendent of the Titan Motors Corp. He was formerly production manager of the Parker Rust Proof Co.

**F. A. Gross** has succeeded George S. Morrow as general manager of the Saxon Motor Car Co. of New York. Mr. Gross was formerly district manager for the Olds Motor Works at Lansing, Mich.

**R. E. Uptegraff** is now designing engineer for the Packard Electric Co., Warren, O. Mr. Uptegraff was assistant chief designer for the Pittsburg Transformer Co. for more than five years and resigned to accept a half interest in the B. Rutherford Co., consulting engineers, Pittsburg, Pa.

**D. B. McCoy** has been appointed advertising manager of the Olds Motor Works. Mr. McCoy was for several years with the Oakland Motor Car Co. A. L. A. Spetler has been made division sales manager of the Olds Motor Works. Mr. Spetlers' territory includes the central states and extends from Ohio to Colorado and from the lakes to the gulf. His headquarters will be at Lansing, Mich.

**B. S. Chamberlain**, formerly traffic agent of the Grand Rapids Board of Commerce, is now traffic manager for the United Motors Co., Grand Rapids.

**Prof. H. L. Thomson** has been placed at the head of the research department of the Moline (Ill.) Plow and Tractor Co. He has had charge of farm engineering for the Oklahoma Agricultural College.

**W. E. Stalnaker**, vice president and director of sales of the Pathfinder Co., Indianapolis, Ind., recently received an appointment as major in the Fourth Indiana Infantry, which is now being mustered into the Federal service and will be ordered into camp at some southern point. Mr. Stalnaker's son, William, is a captain in the same regiment.

W. E. Stalnaker, Vice President of Pathfinder Co., Indianapolis, Now Appointed a Major of the Fourth Indiana Infantry.

**R. L. Leigh**, formerly with the Reo Motor Car Co., has been appointed division sales manager in charge of territory for the Olds Motor Works from the Atlantic coast to and including Michigan, Ohio, Georgia and Florida.

**G. T. McFarland**, formerly with the Westinghouse Electric Mfg. Co., has been appointed manager of the Brooklyn branch of the P. J. Durham Co., 761 Park place.

**D. B. Mugan** has been appointed resident manager of the Edison Storage Battery Supply Co., with headquarters at 201 Baronne street, New Orleans, La. He was formerly in charge of the electrical department of the Illinois Central railroad.

**E. S. Evans** has been appointed district sales manager of the Detroit branch of the American Chemical and Mfg. Co., Norfolk and New York. He was formerly sales manager of the Florida Woodenware Co. His headquarters are at 402 Kerr building, Detroit.

**B. R. McKinney** has been appointed sales manager in the eastern territory for the Corcoran Mfg. Co., Cincinnati, O., makers of the "Peerless" line of Ford radiators, fenders, tool boxes and the Peerless tool kit. Mr. McKinney was for a number of years advertising and sales manager of the Livingston Radiator and Manufacturing Co. Martin Murray is handling the central western territory for the company and both he and Mr. McKinney are under the direction of W. R. Hughes, manager of sales.

B. R. McKinney, Eastern Sales Manager, Corcoran Mfg. Co., Cincinnati, O.

**John N. Willys**, president of the Willys-Overland Co., has been elected president of the Curtis Aeroplane and Motor Corp. Mr. Willys has also become actively interested in the United States Light and Heat Co., which has a plant at Buffalo, N. Y.

**Langdon A. Smith** has been appointed general eastern supervisor for the Maxwell Motor Sales Corp. of Detroit with headquarters in New York City. He will have charge of the New York and Boston zones, which include the states of the Atlantic coast from Maine to North Carolina and as far west as the Cleveland zone. E. F. McConaha will continue as zone supervisor in New York and Hoover Holton of the Boston zone.

**William G. Bee**, vice president and general sales manager of the Edison Storage Battery Co., died recently at his home in Orange, N. J. He was one of the pioneers in the electric automobile business and drove the car in which Thomas A. Edison took his first ride. At that time he was connected with the Pope Manufacturing Co.

**Cornelius T. Myers**, consulting engineer, has been appointed chairman of the chassis builders' committee in Washington for standardization of the class A army motor truck.

**Walter H. Van Dusen** has resigned his position as director of sales and advertising for the Detroiter Motor Car Co. Before joining the Detroiter Co. Mr. Van Dusen was with the King Motor Car Co. in the metropolitan district.

Walter H. Van Dusen, Leaving Detroiter Motor Car Co. as Director of Sales and Advertising.

**Fred W. Thomas**, formerly chief engineer of the Clark Engine and Boiler Co., has resigned. He is now assistant engineer of the Olympian Motors Co.

**Robert S. Stewart**, vice president of the United States Motor Truck Co., has been appointed executive officer in general charge of the company. Forest J. Alvin, formerly sales manager, has been appointed general manager and director of sales. This change was effected because President R. C. Stewart of the United States Motor Truck Co. will devote his efforts to the Stewart Iron Works, of which the truck company is a subsidiary.

**F. H. Tackaberry**, general agent of the American Steel Export Co., has sailed for South America. Mr. Tackaberry will cover a large portion of the Latin-America countries, visiting the following important cities: Rio de Janeiro, Sao Paulo, Buenos Aires, Montevideo, La Plata, Rosario, Valparaiso, Santiago.

**C. E. Reynard** is now district representative of the Lawrence Motor Co.' Mr. Reynard will have charge of the outside territorial organization. The Lawrence Motor Co. is Central Ohio distributor for the Republic and Vim trucks.

**George O. Simpson** has been transferred from the Philadelphia branch to the Kansas City branch of the B. F. Goodrich Rubber Co., succeeding F. A. Oberheu as manager.

William W. Webster, Commissioner of National Association of Automobile Accessory Jobbers.

**William W. Webster**, commissioner of the National Association of Automobile Accessory Jobbers, has issued the annual list of approved jobbers, also a preliminary informal notice to members that the next meeting will be at French Lick Springs, Ind., Sept. 10 to 14. Hotel rates accompany the announcement and a suggestion that reservations be made early. Detailed notice of the meeting and programme is to follow later.

**F. L. Pierce**, for seven years with the Regal Motor Car Co. of Detroit as general sales manager, has resigned. Mr. Pierce is well known throughout the automobile industry, starting in the days of the one-cylinder motor car.

**J. E. Fields** has taken charge of the sales division of the Liberty Motor Car Co. Mr. Fields has been sales manager for the Hupmobile company for the last two years.

**Philip E. Jackson** has been appointed as western sales engineer for the well known "High Grade" radiators made by the Mayo Radiator Co., New Haven, Conn., a subsidiary company of the Marlin-Rockwell Corp. of New York. Mr. Jackson will cover the territory west of Buffalo and Pittsburg and will make his headquarters with A. N. Goodfellow, western sales manager of the Standard Roller Bearing Co., another subsidiary of the Marlin-Rockwell Corp., at 1852 Penobscot building, Detroit, Mich.

**W. R. Angell** has been elected secretary of the Continental Motors Corp. of Detroit, Mich. He succeeds A. H. Zimmerman, former secretary-treasurer, who continues as treasurer of the organization. Mr. Angell is a well known Chicago corporation lawyer.

**R. B. Dickson** has been appointed division manager of the Indianapolis territory for the Prest-O-Lite Co., Inc., and will have headquarters at the Indianapolis down town branch. He will have charge of the development of the Prest-O-Lite products in a territory including most of Indiana and parts of Ohio, Illinois and Kentucky. He succeeds Major W. P. Carpenter, who has entered the army.

**C. W. Warren**, South Bend, Ind., formerly of the Chevrolet Motor Co., has joined the selling forces of the Monroe Motor Co., Pontiac, Mich.

**Ralph Wells** has been elected president of the Menominee Motor Truck Co., Menominee, Mich. The other officers are: E. S. Stephenson, vice president; O. G. Watson, secretary; G. M. Evans.

**F. E. Titus** has been appointed manager of the foreign sales department of the B. F. Goodrich Co., Akron, O. His headquarters will be in New York. Mr. Titus was formerly manager of the Buffalo store and has been in the Goodrich service since 1909.

**R. T. Hodgkins** has joined the navy and has the rank of lieutenant. He is general sales manager of the Studebaker Corp. Mr. Hodgkins was formerly an officer of the navy.

**E. H. Belden** has been appointed chief engineer in charge of all the engineering departments of the Willys-Overland Co. He has been connected with the Overland company for the past six months as head of the research department and prior to that time was engineer of the Packard Motor Car Co., Detroit, Mich.

**D. W. Figgis**, who joined the Smith Motor Truck Corp. several months ago as assistant to President E. I. Rosenfeld, has been elected to succeed Mr. Rosenfeld as head of the corporation. Mr. Rosenfeld remains as president of the board of directors. Mr. Figgis was with the American Can Co. for 16 years. The vice president of the company is B. E. Veatch. L. A. Stebbins is secretary and general counsel and C. R. Hammer treasurer.

**George F. Cox** will take charge of the New York City service department of the Chase Motor Truck Co., Syracuse, N. Y., on Aug. 1, to succeed L. H. Tietge, who has resigned. Mr. Cox has been connected with the Chase organization for a number of years and was formerly stationed at the company's agency in Providence, R. I.

**L. J. Kaiser** has become vice president and sales manager of the Royal Motors Corporation.

**Charles S. Rieman**, vice president and general manager of the Elgin Motor Car Corp., Chicago, was host at a banquet tendered to over 50 dealers in connection with the recent meeting at Chicago, at which was formed the National Automobile Dealers' Association. After informing the dealers of his belief that the results of their movement would be to increase the efficiency of the automobile dealer and create better business and larger profits for the dealer, Mr. Rieman said: "I likewise believe that prosperity for the dealer means prosperity for the manufacturer, and that, therefore, every manufacturer will eventually recognize the fact that this association should be commended, encouraged and helped by the manufacturer."

C. S. Rieman, Vice President and General Manager of the Elgin Motor Car Corporation Chicago, Ill.

# HAPPENINGS AMONG THE CAR AND PARTS MAKERS

## What Several of the Leading Manufacturers in the Motor Vehicle Industry and Allied Lines Are Doing or Have Under Consideration

**The Portage Rubber Co.**, Akron, O., has declared a quarterly dividend of three per cent., payable Aug. 14 to stockholders of record Aug. 5. This places the stock on a 12 per cent. basis.

**The Waasworth Mfg. Co.**, Detroit, Mich., maker of automobile bodies and tops, has increased its capital stock from $250,000 to $650,000.

**The Appleton Co.**, Appleton, Wis., has outgrown its plant and is now making preliminary arrangements for the erection of new works during the fall and winter. The company was organized in February to manufacture a varied line of bodies for passenger, commercial cars and Ford truck units.

**The Universal Valve Co.**, Chicago, Ill., has moved its general offices to Burlington, Wis., where its products have been manufactured under contract for a number of years by the Burlington Brass Co. J. B. Knudson, vice president and treasurer, is in charge of the offices. The company's specialty is a non-jacking valve for high pressure purposes.

**The Killen-Strait Tractor Co.**, Appleton, Wis., is completing the work on a new foundry building in which it will manufacture all of the castings required in the making of its machines. The raw castings were purchased from outside foundries and machined in the Appleton plant. The company's requirements of castings have more than doubled during the past year.

**The Miller Rubber Co.**, Akron, O., opened a cafeteria for its factory employees. It has been carefully installed and every detail is provided for equipment, convenience and service. The prices for food are on a cost basis and the kitchen outfit is designed along strictly modern lines. The company employs 3009.

**The Packard Motor Car Co.**, Detroit, Mich., will erect a sales building of eight stories to cost $1,200,000.

**The Fisk Rubber Co.**, Chicopee Falls, Mass., has purchased the assets and plant of the Gibney Tire and Rubber Co. of Conshohocken, Pa., manufacturers of solid rubber tires, and will operate the plant at full capacity.

**The Springfield Carburetor Co.**, Springfield, Mass., has been incorporated with $500,000 capital. The officers of the company are: President, Anton C. Schmelzer; vice president, George H. Morganstern; second vice president and treasurer, Frank W. Arthur; clerk, Nathan B. Avery.

**The Republic Rubber Co.**, Youngstown, O., has secured an option on the Knight Tire and Rubber Co., Canton, O., and it is understood that the companies will be merged into a $20,000,000 company.

**The Kelsey Wheel Co.** and subsidiaries reports for the quarter ending March 31 last a total income of $373,809. The gross sales less returns and allowances were $2,761,109.

**The Paige Motor Car Co.**, Detroit, Mich., has announced a new price schedule, which became effective July 15. The new list is as follows: Stratford 6-51, seven-passenger, $1495; Fairfield 6-46, seven-passenger, $1375; Linwood 6-39, five-passenger, $1175; Brookland 6-51, four-passenger, $1695; Dartmour 6-39, two or three-passenger, $1175; limousine 6-51, seven-passenger, $2750; sedan 6-51, seven-passenger, $2750; sedan 6-39, five-passenger, $1775; town car 6-51, seven-passenger, $2750.

**The Reya Co.**, Napoleon, O., has been organized with a capital of $800,000 to take over the truck end of the Napoleon Auto Mfg. Co. The company, which is being largely financed by eastern capital, is making a light special truck of unusual design and will later build a ton and 1½-ton attachment. The Reya truck will have a 3¾x4½ motor, Dyneto electric and starting system, Dixie high-tension magneto, Peru axle, 117-inch wheelbase, standard tread, Babcock special bodies. Officers of the new company are: President, J. J. Mullan of the Wheeler Mfg. Co., 114 Liberty street, New York; vice president, Charles Lang of the same company; vice president, L. W. Schultz, who is vice president of the First National Bank, Napoleon, O.; secretary, W. W. O'Hara, 132 E. 19th street, New York; general manager, M. H. Ayer, 29 Monroe street, Brooklyn; treasurer, J. W. Gates, 221 Singer building, New York.

**The Butler Mfg. Co.**, Indianapolis, Ind., specialists in cylinder regrinding, pistons, rings and pins, announces it is enabled to maintain its price list without advancing any of its products. The Butler plant is operated on a production basis and the best and latest machinery is used.

**The Prest-O-Lite Co., Inc.**, Indianapolis, Ind., has appointed the following firms and individuals as battery service stations for Prest-O-Lite storage batteries: Sidney Electrical Supply Co., Sidney, Neb.; Harting's Garage, 117 E. Greenup St., Ashland, Ky.; Schwiers' Garage, corner Railroad St. and 2nd Ave., E., Halopall, Mont.; Storage Battery Service Co., 26 First St., Warren, O.; Automobile Service and Battery Co., 281 N. Jefferson St., Mexico, Mo.; Harry Oran & Son, Warsaw, Ind.; Schenher-Alidor Elco Co., Mobile, Ala.; Lewistown Auto Repair Co., Lewistown, Mont.

**The Eastman Vortex Gas Generator Co.**, makers of the Eastman Vortex Gas Generator, which permits the use of kerosene on a Ford car, has moved its factory and offices from 1019 Superior Ave., Dayton, O., to 16 and 18 East First Ave., Columbus, O., where permanent headquarters are located.

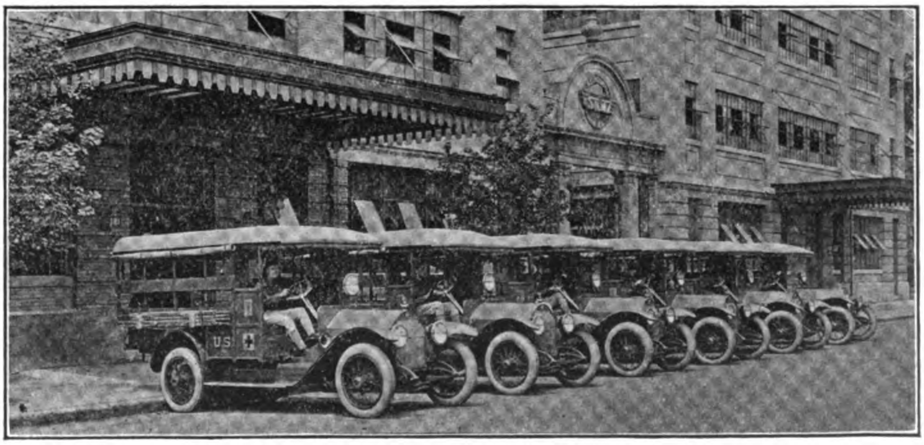
**The La French Power Spark Plug Co.** has been incorporated for $100,000 and the office and manufacturing plant has been removed to Columbus.

**The Wallace C. Hood Service Bureau**, Detroit, Mich., will supervise the distribution of the Retlaw gasoline gauges for Ford cars throughout the United States and foreign countries.

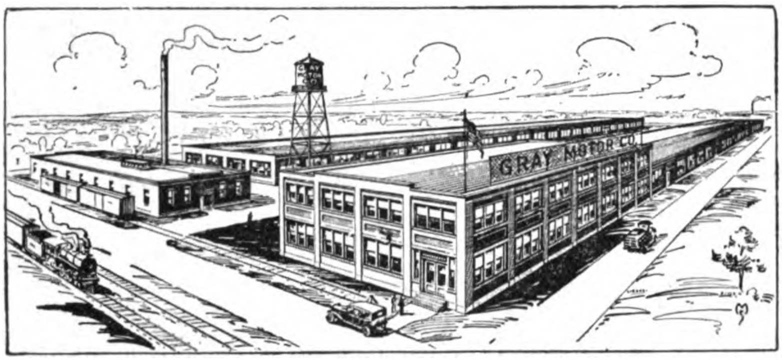
**The Maxwell Motor Co.** will earn in excess of $5,000,000 for the fiscal year ending July 31 according to estimates recently made. After allowing for first and second preferred dividends the earnings are equivalent to about 30 per cent. on the common stock.

**The Swinehart Tire and Rubber Co.** has declared a quarterly dividend of 1½ per cent. on the common stock in new preferred stock script instead of cash. This method of paying the dividend was adopted as a means of conserving the company's cash capital.

**The Stutz Motor Car Co.**, Indianapolis, Ind., has delivered to the government six Stutz ambulances presented by the Stutz company and the Parry Manufacturing Company.



Six Motor Ambulances Presented by the Stutz Motor Car Co., and the Parry Manufacturing Co., Turned Over to the Government at Indianapolis.



New Home of Gray Motor Co., on Detroit Terminal Railway, Detroit, Mich.

**The Gray Motor Co.**, Detroit, Mich., is moving into its new plant on the Detroit Terminal Railway, the large machine shop being the first of three large industrial buildings to reach completion. Among the labor and time saving devices installed in the new Gray plant is a complete conveyor system for the handling of rough castings from the cars through the machine shop, through the assembly room, and the finished engines from the assembly through the testing, painting and shipping departments.

**The Meder-Staudt Co., Inc.**, has been merged with the Witherbee Storage Battery Co., Inc. The consolidation does not involve any change in the personnel of the company, its stockholders, directors or department. The company will remain unchanged. The factory in New York City was entirely reorganized last spring and new equipment and machinery installed. All the service work is handled at the service station, 1904 Broadway, and at the sub-stations throughout the city and in other parts of the country.

**The Norma Company of America**, 1790 Broadway, N. Y., issued a special folder on the occasion of the S. A. E. meeting in Washington. The title given was "Norma"—In the National Service, and referred to the standardization of magnetos and lighting generators on "Norma" ball bearings in the fields covered by the combined societies, automobiles, trucks and motorcycles, motorboats, aeroplanes, gas engines and tractors.

**The New Era Spring and Specialty Co.**, Detroit and Grand Rapids, Mich., have been granted a patent under serial application 141,415, covering tire carriers of the interchangeable type or expansion of the flexible band principle with several methods of adjustment.

**The La French Power Spark Plug Co.**, Dayton, O., has been reorganized with a capital of $100,000 and will move to Columbus, O., where a large three-story building at 16 and 18 East First avenue will be occupied. The La French power spark plug sells for $1 each and has a "nix-ite" insulator, which is inserted inside an independent steel and is designed especially for hard usage as in high compression engines in motor cars and airplanes.

**The Templar Motors Corp.**, Cleveland, O., organized in November, has started the erection of a plant. The first unit will be completed in 90 days. It is located along the New York Central railroad line. A double platform track spur is included in the layout of the plant, which will cost when completed $150,000.

**The Reo Motor Car Co.**, Lansing, Mich., has purchased material enough to supply the company's wants up to January, 1918, and will turn out 100 per cent. more trucks than in 1916 and 5000 more passenger cars than in the preceding months. The company's orders now amount to over 8000 passenger cars and a large number of trucks.

**The Bukolt Mfg. Co.**, Stevens Point, W. Va., has moved into its new plant and will now expand its production fourfold. The entire force is working overtime and the carbonizing furnaces for the metal parts of the protector are being operated day and night, including Sundays. The company manufactures highway tire protectors.

**The Dale Body Co.**, Fostoria, O., has begun the erection of its new plant at Fostoria, O. The company will manufacture bodies for the Allen Motor Co. The structure will be fireproof and of modern construction. It will have 30,000 square feet of space and the plant will be capable of turning out 100 bodies a day.

**The Amazon Rubber Co.**, New York, N. Y., has opened an office at 2176 Broadway to supply the needs of eastern dealers. No tires will be sold direct to consumers. Owen Moynihan, eastern district manager, is in charge.

**The Bridgeport Brass Co.**, Bridgeport, Conn., has moved its New York office to suite 2236 Woolworth building, where more commodious quarters have been provided.

**The Empire Automobile Co.**, Indianapolis, Ind., has brought out a four-passenger, six-cylinder tourabout at $1285, model 71. This model has the same engine as model 70A, a Continental, 3¼ by 4½. The body has a clean cut taper from the back to the front seats to the extreme rear and also has a narrow racing type, radiator, sloping hood, staggered windshield, deep front cowl and divided front seats.

**The Wisconsin Carriage Co.**, Janesville, Wis., has changed its name to Janesville Products Co. and has increased its capital stock from $100,000 to $130,000. It is one of the oldest manufacturers of fine carriages and vehicles in the middle west.

**The Studebaker Corp.** announces that no change is contemplated in the Studebaker models for the coming year; also that high prices of material and labor may make necessary an increase in the selling price of Studebakers at any time.

**The Pierce Governor Co.**, Anderson, Ind., has just received an award of contract from the postmaster-general for equipping the gasoline motor vehicles in the postal service with speed governors. This contract will be in effect for the ensuing fiscal year.

**The Jordan Motor Car Co.**, Cleveland, O., reports that the business in middle, southwestern and northwestern sections has increased 60 per cent. in the last 60 days. Shipments during May totaled 287 cars, making the total value of sales up to June 1, $2,703,750.

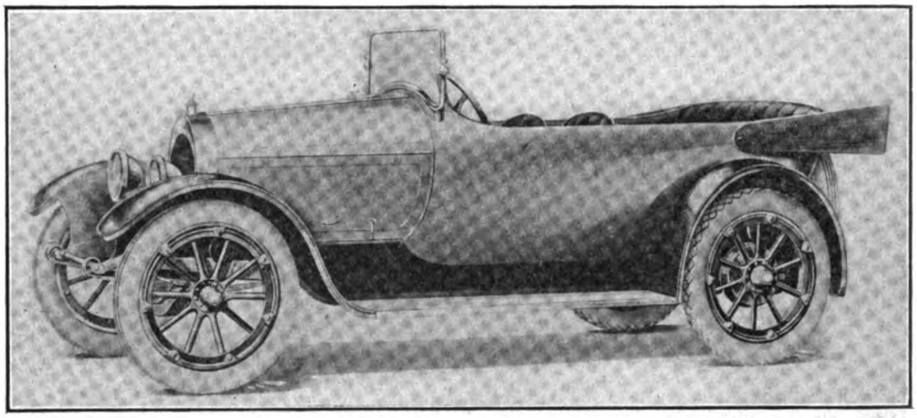
**The Elgin Motor Car Corp.**, Chicago, Ill., announces removal to its new office building, 2427 Michigan Ave., from its former business headquarters at 1543 McCormick building.

Elgin Six
Elgin

Factory of the Elgin Motor Car Corporation, 61st Street and Archer Avenue, Chicago, Ill., Showing Cars Emerging from the Testing Floor Under Tents, Used Temporarily While Building Operations Proceed.

# *Details of the Nelson Four-Cylinder*

**The Nelson car is manufactured by E. A. Nelson, Mechanical Engineer, Detroit, who is the designer as well as the builder of the car. On the short wheelbase chassis the touring car offers as much room as many of the larger five-passenger models on the market. The door is on the right or curb side of the car. The many novelties in this car were described in detail in the Automobile Journal of June 25, 1917.**



**Nelson Four-Cylinder Five-Passenger Touring Car, Disclosing Distinctively New Lines in This Type of Car. Priced at $1700.**

**Engine, four-cylinder, valve in head.**
**Bore and stroke, 3⅛x4¾.**
**Horsepower (S. A. E.), 15.6.**
**Carburetor, Nelson-Zenith.**
**Clutch, multiple disc.**
**Ignition, Bosch.**
**Starting and Lighting, U. S. L.**
**Lubrication, forced feed and splash.**
**Cooling, thermo-syphon.**
**Transmission, three speeds forward and reverse.**
**Rear axle, full floating.**
**Springs, special suspension.**
**Wheelbase, 104 inches.**

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# NEW CONCERNS RECENTLY INCORPORATED.

## Monthly Record of New Business Houses for which Charters Have Been Issued In the Various States and Classified According To Nature of Business.

### Newly Organized Manufacturers of Cars.

**Little Rock, Ark.;** The Myar Mfg. Co.; $10,000; to manufacture automobile seat covers, top hoods, engine and radiator hoods; Sam A. Myar, Harry B. Solmson, John W. Myar, Connard C. Brandt.

**Dover, Del.;** The Pathfinder Motor Co.; to manufacture automobiles, motors; C. M. Rimlinger, Clement M. Egner.

**Wilmington, Del.;** The Auto Safety Signal Co.; $1,000,000; S. D. Townsend, Jr., Emile V. Topkis, A. F. Husler.

**Chicago, Ill.;** Fulton Motor Sales Co.; $2500; J. D. Iverson, W. A. Iverson, H. C. Griffen.

**Kokomo, Ind.;** Long Light Lens Co.; $25,000; to manufacture automobile and motor vehicle headlights; Maurice E. Louth, Fred L. Trees, Earl B. Barnes.

**Louisville, Ky.;** Improved Windshield Mfg. Co.; $30,000; D. T. Duckwall, Jr., W. R. Shacklette, J. Bauer.

**Louisville, Ky.;** South Louisville Motors Co.; $5000; Emanuel Stocker, Ernest Moore, Fred Shubach.

**Wolf Point, Mont.;** Wolf Point Motor Co.; C. S. Olson, T. M. Olson, L. O. Bordahl.

**New York, N. Y.;** Denby Eastern Distributors, Inc.; $5000; to manufacture automobiles, trucks, engines, motors and accessories; S. Swartzman, H. M. Callanan, F. W. Lutz.

**Rochester, N. Y.;** Rochester Haynes, Inc.; $5000; to manufacture automobiles; A. Holley, E. E. Fairchild, W. F. Fairchild.

**Hempstead, N. Y.;** Peterson Storage Battery Co., Inc.; $10,000; to deal in batteries and to conduct a general garage business; C. Peterson, J. H. Peterson, A. Peterson.

**New York, N. Y.;** Central Battery Corp.; $600,000; to manufacture electric batteries; H. S. Johannsen, Pl. Platou, J. B. Wardwell.

**New York, N. Y.;** Nugo Device Corp.; $20.000; to manufacture automobile safety locks: Hugo Neu, Benjamin Stamper, Ludwig Blaha.

**Cleveland, O.;** The Hale Greene Co.; $10,000; to deal in automobile parts; H. C. Vale, O. V. Greene, James H. Griswold, John A. Hadden, R. S. Douglas.

**Oklahoma City, Okla.;** Midland Motor Agency Co.; $200,000; Paul M. Pope, J. W. Sanders, O. E. Jones.

**Philadelphia, Pa.;** The Auto Signal Co.; $10,000; to manufacture auto signals and accessories; Louis Cherry.

**Tulsa, Okla.;** Seepitt Motor Sales Co.; $5000; J. A. Secunde, G. E. Pits, C. K. Barber.

### Dealers In Automobiles and Motor Trucks.

**Cannon City, Col.;** Royal Garage Motor Co.; $25,000; to deal in automobiles and to conduct a garage; J. F. Campbell, M. & J. O. Zontini.

**Colorado Springs, Col.;** Rice Motor and Tractor Co.; $50,000; to deal in automobiles; E. E. and B. F. Rice, W. J. Ash.

**Dover, Del.;** Hayes Starnes Axle Co.; $1,600,000; to purchase and lease lands and building, especially of the business of E. B. Hayes, dealer in automobile trucks; Samuel B. Howard, Arthur W. Britton, Harry B. Davis.

**Winter Park, Fla.;** Winter Park Auto Co.; $5000; to deal in automobiles and operate a 'bus line; A. W. Mason, Carrie W. Temple, Dorothy Mason.

**Chicago, Ill.;** Denmo Cunning Truck Co.; $5000; Ward Cunningham, John F. Waters, M. D. Cunningham, Malcolm Cunningham.

**Anderson, Ind.;** The Baker, Ryan & Coons Co.; $10,000; to buy and sell automobiles; John Ryan, William T. Baker, Lansing M. Coons.

**Cedar Rapids, Ia.;** Mitchell Auto Co.; $10,000; to buy and sell and deal in automobiles and automobile parts; W. H. Borschel, John S. Chandler, Josephine Chandler.

**Salina, Kan.;** Simpson-Hoffman Motor Co.; $15,000; to deal in automobiles; H. C. Simpson, Jr., C. N. Hoffman, I. L. Simpson, T. P. Worsley, Jr., C. D. Hoffman.

**Cynthiana, Ky.;** R. L. Terry Motor Car Co.; $3000; R. L. Terry, N. S. Terry, George W. Bocher.

**St. Louis, Mo.;** Mitchell Automobile Corp.; $25,000; to deal in automobiles, motor vehicles and automobile parts of all kinds; William A. C. Halwer, Clyde Gary, Wesley A. Slanger.

**Camden, N. J.;** Camden Motors Corp.; $1,000,000; to do a general automobile business.

**Newark, N. J.;** United Line Service Corp.; $50,000; to sell automobile trucks and parts; J. Jacobs, G. P. Sweet, E. D. Kenyon.

**Brooklyn, N. Y.;** Dean Auto Exchange. Inc.; $10,000; to deal in automobiles, motor trucks and accessories; D. Manzolino, R. Blanke, A. A. Cestro.

**Brooklyn, N. Y.;** Kings Highway Auto Sales Co., Inc.; $5000; to deal in automobiles; P. B. Goldhamer, B. G. Lowenthal, G. Lowenthal.

**Brooklyn, N. Y.;** Sutherland Forwarding Co., Inc.; $5000; to conduct an express and trucking business; D. Sutherland, P. M. Frazier, P. A. Abry.

**Buffalo, N. Y.;** Halstead Morlock Motor Corp.; $10,000; to deal in automobiles and accessories; L. A. Halstead, J. F. Morlock, R. H. MacGregor.

**New York, N. Y.;** Super-Diesel Tractor Corp.; $10,000; to manufacture mechanical tractors and agricultural machinery: E. A. Rumely, C. A. Lewis, R. A. Budd.

**Nyack, N. Y.;** Whipfall's Garage, Inc.; $5000; to deal in automobiles and airplanes; F. J. Whipfall, W. J. Whipfall, B. Hass.

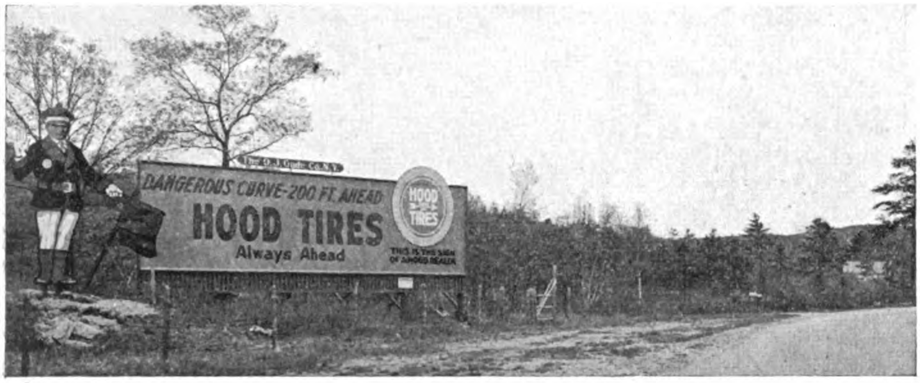
**Rochester, N. Y.;** Moline-Knight Sales Co.; $10,000; to deal in automobiles; Le Roy R. Webber, Charles J. Pembroke, Herbert C. Kelly.

**Rochester, N. Y.;** Sergeant Motor Co.; $50.000; to distribute and repair motor vehicles; A. W. Sergeant, F. H. Peabody, E. W. Hoadley.

**Watertown, N. Y.;** Warren J. Green Co.; $20,000; to deal in automobiles and motor boat accessories and electrical supplies: Warren J. Green, L. M. Moore, C. W. Bailey.

**Cleveland, O.;** The Truck Engineering Co.; $100,000; to deal in automobiles; A. V. Cannon, O. O. Vrooman, H. O. Mierke, R. T. Kelsey, Herbert A. Spring.

# *Hood Flagman in New England*


The O. J. Gude Co. N. Y.
DANGEROUS CURVE-200 FT. AHEAD
HOOD TIRES
Always Ahead
HOOD TIRES
THIS IS THE SIGN OF A HOOD DEALER

**New England Roadside Displays by the Hood Tire Co., Inc., Warn of Road Dangers. This One Is at Wilmington, Mass.**

The Hood Tire Company, Inc., manufacturers of Hood Puritan pneumatic and Hood solid tires, have started a unique campaign in the way of warning motorists of road dangers by placing a Hood silent salesman on guard at such points throughout New England. The attitude of the Hood signal man, a giant figure looming above the great sign boards along side which he stands, and the fact that his striking figure can be seen from a long way off, calls the motorist's attention to the caution which is painted in large letters on the sign board. One cautionary sign will tell of a dangerous curve ahead, another give a good reason for keeping to the right, and so on. Already 80 of these signs have been installed along New England's most popular motoring routes.

## Dealers in Automobiles and Motor Trucks

**Portland, Ore.;** Roberts Motor Car Co.; $5000; to deal in automobiles; E. A. Geneste, B. Roberts, I. H. Barnisolt.

**Healdton, Okla.;** Fleet Cooper's Auto Co.; $20,000; Fleet Cooper, L. C. Beall, Top Cooper.

**Muskogee, Okla.;** Wright Motor Car Co.; Archie Wright, Nat M. Mitchell, Myrtle Wright.

**Philadelphia, Pa.;** Motor Equipment Co.; $20,000; Charles M. Green.

**Giddings, Tex.;** The Collier Motor Co.; $5000; J. W. Collier, E. M. Collier, W. A. Pruess.

**Amarillo, Tex.;** Cullum Motor Co.; $10,000; to deal in automobiles; J. R. Cullum, Burl Cavins and T. B. Reeves.

**Dallas, Tex.;** Riddle-Lake-Cole Co.; $10,000; to deal in automobile supplies; P. Riddle, S. T. Lake, G. B. Cole.

**Sioux Falls, S. D.;** The Green Dragon Co.; $50,000; to deal in automobile accessories; J. W. Fenn, F. D. Jewett, R. F. Brownell.

**Knoxville, Tenn.;** East Tennessee Co.; $15,000; to deal in automobiles; D. I. Reed, Harman O. Acuff, C. S. Cunningham, George M. Trotter.

**Elizabethton, Tenn.;** Hot Stone Motor Co.; $10,000; to engage in a general automobile business: $10,000; H. T. Potts, B. A. Williams, T. E. Whittaker, E. W. Potts, S. W. Dungan.

**Alexandria, Va.;** Alexandria & Occoquan Auto Co.; $10,000; to deal in automobiles; John Leary.

**Lynchburg, Va.;** Madison Auto 'Bus Co., Inc.; $5000; W. M. Stump, B. Cohen.

**Morgantown, W. Va.;** Union Truck Co.: $25,000; to deal in automobiles; E. V. Everly.

**Fond Du Lac, Wis.;** Kerr-Kemler Motor Co.; $10,000; to deal in automobiles; H. W. Kerr, H. D. Kemler, T. E. Leahy.

## Garages and Repair Shops Newly Chartered.

**Adairville, Ky.;** Halcomb Garage & Machine Co.; tó conduct a garage; $8000; G. W. Halcomb.

**Glenview, Ill.;** Glenview Garage; $4500; Laurence B. Burnham, Swan A. Carlson, Henry C. Hattendorf.

**Boston, Mass.;** Sullivan Square Garage Co.; $10,000; John J. Hanley, Maurice J. Freeman, Joseph E. Donavan.

**Brooklyn, N. Y.;** Stucco Garage, Inc.; $5000; to conduct an automobile garage business; B. Schanzer, W. Wowerit, C. H. Wowerit.

**Buffalo, N. Y.;** Cooper Garage and Vulcanizing Works; $10,000; A. Stuart Cooper, Florence Cooper, Alfred Scrimshaw.

**New York, N. Y.;** Martinique Garage, Inc.; $5000; F. Rowfet, E. Woodburn, P. Simon.

**Woodside, N. Y.;** Woodside Garage, Inc.; $5000; to conduct a general automobile and garage business; C. Willie, B. Willie, P. Weiss.

**Bismarck, N. D.;** The Forman Garage Co.; $25,000; to operate a garage; D. J. Jones, C. O. Marcellus.

**Cleveland, O.;** The American Garage Co.; $10,000; Dillow P. Veach, Rollo E. Woodworth, William A. Snyder, P. Bredel, A. L. Dolan.

**Drumright, Okla.;** Central Auto Co.: $8000; to conduct a garage business; F. H. Lang, G. A. Laughlin.

**Portland, Ore.;** A1 Auto Works and Painting Co.; $5000; to do auto repairing; C. A. Gore, E. L. Curtis, S. Armishaw.

**Milwaukee, Wis.;** Summit Garage Co.; $10,000; to conduct a garage; Paul J. Cohen, 548 Prospect street; O. L. O'Boyle, J. Hennessey.

## Newly Organized Manufacturers of Automobiles and Trucks

**Dover, Del.;** American National Sales Co.; $100,000; to manufacture and sell automobiles; F. R. Hansell, J. Vernon Pimm, S. C. Seymour.

**Wilmington, Del.;** Whitman Bull Tractor Co.; $2,700,000; to manufacture tractors and all kinds of farm machinery; C. L. Rimlinger, Henry M. Robinson, Clement M. Enger.

**Independence, Kan.;** The Independence Motor Co.; $20,000.

**Portland, Me.;** Maine Motor Co.; $500,000; to manufacture and deal in motor vehicles and parts and accessories.

**Grand Rapids, Mich.;** The Samson Trailer Co.; $150,000; to manufacture automobile trailers and tractors; Frank T. Hulswitt, David A. Warner.

**Muskegon, Mich.;** Muskegon Engine Co.; to manufacture a valveless four-cycle engine; C. E. Johnson, H. L. Schuh.

**Albany, N. Y.;** Acme Auto Truck Sales Co.; $12,000. to manufacture motor trucks; George A. Hubbard, Frank H. Sauter, F. Taylor Marks.

**Albany, N. Y.;** Albert A. Franklin Corp.; $10,000; to manufacture motors, automobiles and airplanes; J. Boll, F. W. Hendrickson, A. P. Franklin.

**New York, N. Y.;** The Bethlehem Truck Co.; $50,000; to manufacture motor trucks; J. T. Abels, S. M. Lazarus, W. P. Riley.

**New York, N. Y.;** Doble Detroit Steam Motors Co.; $10,000,000; to manufacture, sell and deal in automobiles, trucks, airplanes; Abner Doble, T. P. Myres, M. J. Harmos, Claude Lewis.

**New York, N. Y.;** Gould Motor Parts Co.; to manufacture, buy, sell and deal in and with motor trucks; C. L. Rimlinger, Henry M. Robinson, Clement M. Enger.

**Philadelphia, Pa.;** Great American Truck and Tractor Co.; to manufacture and sell automobiles, trucks and tractors; H. Therbald, E. Franklin, G. King Franklin.

## Accessories, Equipment and Supplies

**Colorado Springs, Col.;** Portage Tire and Supply Co.; $50,000; to deal in automobiles, tires and supplies; H. E. Gove, G. E. Watterman, C. T. Engle.

**Joliet, Ill.;** Auto Clearing House; $15,000; Lewis C. Gray, William Theiler, Thomas E. Ryan.

**Indianapolis, Ind.;** Britton Carburetor Co.; $15,000; to manufacture carburetors and automobile accessories; Carl G. Fisher, Charles G. McCutchen, Quintin G. Noblitt.

**Peru, Ind.;** The Weigel Machine Tool Co.; $115,000; to manufacture automobile accessories; Albert P. Weigel, M. F. Gartland, G. E. Meck, Harry B. Fox, James Rider.

**Detroit, Mich.;** The Picard Carburetor Corp.; $100,000.

**Newark, N. J.;** O. W. Young, Inc.; $25,000; to manufacture and deal in lubricating and illuminating oils; Joseph T. Davey, Kate F. Montrose, Patrick A. Blewith, Clarence H. Smith.

**Trenton, N. J.;** Dural Rubber Co.; $200,000; to manufacture automobile tires, tubes, rubber accessories; Newton A. K. Bugbee, Frederick F. Katzenbach, Edgar H. Wilson, G. F. Ginlen, James C. Tattersall.

**New York, N. Y.;** Atlanta Tire Rubber Co.; $1000; to manufacture tires; A. Weldon, Syden Bernheim, Harry H. Jacobson.

**New York, N. Y.;** Hydro-Eye Co., Inc.: $5000; to manufacture carbon removers and automobile accessories; E. Koeb, W. F. Conell, T. Johnson.

**New York, N. Y.;** Manhattan Motor Supply Co.; $10,000; to manufacture tires; Walter V. Burke, Bailey C. Elliott.

**New York, N. Y.;** Pioneer Engineering Corp.; $25,000; to manufacture portable electric lamps and speed changing devices for automobiles; D. C. Conkling, H. C. Conkling, E. W. Picker.

**New York, N. Y.;** Police Auto Traffic Signal Co.; $24,000; to manufacture accessories and signal devices for autos: E. Mayer, M. H. Newman, S. Kohn.

**Syracuse, N. Y.;** Lowry-Knise Tool Co., Inc.; $10,000; to deal in machinery, tools and dies; E. N. Lowry, A. E. Knise, E. E. Knise.

**Watertown, N. Y.;** Warren J. Green, Inc.; $20,000; to manufacture automobile accessories, electrical supplies; W. J. Green, L. M. Moore, G. W. Bailey.

**Cleveland, O.;** The Maltbie Auto Shop Co., 807 St. Clair Ave., N. E.; $10,000; to deal in automobiles and to repair; C. S. Maltbie.

# NEW BUSINESS CONCERNS AND CHANGES OF NAMES.

## The Month's Record of Transfer of Ownerships and Opening of Garages, Agencies, Branches, Service Stations and Repairs Shops.

### Recent Transfers of Business Ownerships.

**Taft, Cal.;** A. Dowd has acquired the Commercial Garage.

**Deep River, Ia.;** Cloyd Forney has purchased an interest in the Sterrett Garage.

**Ottumwa, Ia.;** The Ottumwa Auto Co. has been taken over by W. J. Courtney and W. I. Gladish.

**Portsmouth, Ia.;** Mathew Ohlinger and Lew Raymond have purchased W. J. Herkenrath's interest in the Portsmouth Auto Co.

**Sidney, Ia.;** Millard Abshire has taken over the garage formerly operated by his father, E. A. Abshire.

**Strahan, Ia.;** The Wickersham Auto Co. has been sold to Harold Peterson, who will operate the business under the name of the Strahan Auto Co.

**Ladysmith, Kan.;** The Fults Auto Co. has taken over the business of the Spear Garage.

**Latham, Kan.;** Harry Stilles is successor to Ellis Brothers' Garage.

**Ottawa, Kan.;** A. E. Selis has purchased the Stevenson Garage at Richmond.

**Bovey, Minn.;** The Roan Hotel has been purchased by S. E. Grindall & Son, who will remodel it into a garage.

**Lohman, Mo.;** J. I. Freshley has taken over the Lohman Garage and has secured the agency for Allen cars.

**Marysville, Mo.;** Kramer & Carpenter of Burlington Junction have taken over the tire department and the repair shop of the Sewell Garage.

**St. Louis, Mo.;** Paul Harris has taken over the controlling interests in the Auto Battery and Supply Co., which is located at 3912 Washington boulevard.

**Alva, Okla.;** J. M. Cress is the successor to Alva Motor Car Co.

**Bryant, S. D.;** Behrens & Behrens are successors to Behrens and Cheesman Garage.

**Ashland, Wis.;** Davis Motor Car Co. has taken over the tire and accessory store of the Ashland Buick Co.

**Soldiers Grove, Wis.;** Wilbur McDowell has disposed of his garage and machine shop to Roy Turk.

### New Business Locations and Removals.

**Oakland, Cal.;** Chanslor & Lyon will occupy new quarters in the new building being erected on Webster street.

**Atlanta, Ga.;** Rinehart Electric Auto and Battery Co., Linus and William streets, has removed to 547 Peachtree street.

**Macon, Ga.;** Alexander Sewald Co., 420 Second street, has removed to Atlanta, Ga.

**Peoria, Ill.;** B-P Motor Co., 418 Main street, has moved to 2010 Main street.

**Chicago, Ill.;** Community Rubber Co., 1240 Michigan avenue, has moved to 2011 Michigan avenue.

**Chicago, Ill.;** Osgood Autolite Reflector Co., 1921 Harris Trust building, has moved to 2007 Michigan boulevard.

**Chicago, Ill.;** Ritz-Woller Oliver Co., 168 W. Lake street, has moved to 3264 Grand avenue.

**Tuscola, Ill.;** The Tuscola Motor Co. has removed to its new salesrooms.

**Liberty, Ind.;** The Stanley Motor Co., which is located on West Union street, has been taken over by Cecil Irwin. The new concern will be known as the Irwin Motor Car Co. and will continue to handle Buick cars, automobile accessories and do repair work.

**Topeka, Kan.;** The West Motor Car Co., local agent for Chevrolet and Studebaker cars, has moved into its new home.

**Springfield, Mass.;** The Chandler Motors of Springfield, Inc., has removed to new quarters at 287 Chestnut street. In addition to affording space in the salesroom and stock room, the building makes possible a fully equipped service station.

**Grand Rapids, Mich.;** Simplicity De mountable Wheel Co., 422 Bond avenue, has moved to 11 N. Market avenue.

**Forsyth, Mont.;** Wadingham & Lawson will occupy quarters in the new Crimmins building when it is completed. The company does auto tire vulcanizing and auto accessories.

**St. Louis, Mo.;** Westcott Motor Sales has moved to 2324 Locust street.

**Broken Bow, Neb.;** G. C. Ream will move to the old Lyric building.

**New York, N. Y.;** Ireland Rubber Co., 1662 Broadway, has moved to 1694 Broadway.

**New York, N. Y.;** Meteor Auto Tank Co. is now located at 830 Seventh avenue. The company was formerly located at 1666 Broadway.

**Syracuse, N. Y.;** Mansfield Mfg. Corp., 823 Maryland avenue, has moved to 303 the Moore apartment.

**New York, N. Y.;** Royal Tire Co., 833 Seventh avenue, has moved to 243 West 57th street.

**New York, N. Y.;** United Line Service Corp., agent for United trucks and tractors, has moved to a new sales and service station at 11th avenue and 50th street.

**Philadelphia, Pa.;** N. A. Petry Co. has moved to 1309 Race street. The company was formerly located at 1427 Vine estreet.

**Pittsburg, Pa.;** K-A-L Supply Co., Arcade building, has moved to the Manufacturers' building.

**Pittsburg, Pa.;** K. A. Ward has established quarters at 117 South Highland avenue for the Ajax Rubber Co.

**San Antonio, Tex.;** Clem Motor Car Co. will move to larger quarters at Eighth and Avenue C.

**Bellingham, Wash.;** The Tyre Shop has removed to larger quarters.

### Garages and Repair Shops Newly Chartered.

**Decatur, Ill.;** Pierce & Caldwell have established a new garage at the cost of $10,000.

**Rockford, Ill.;** The Overland-Rockford Co. has opened a new garage.

**Algona, Ia.;** Frank Heinsohn has opened an auto tire shop.

**Great Bend, Kan.;** T. J. Clark has opened an auto repair shop.

**Norton, Kan.;** The Norton Tire Repair Co. has opened a repair shop.

**Eldorado, Kan.;** R. M. Robinson has opened a repair shop and will carry a full line of accessories.

**Emporia, Kan.;** Curby, Yates & McLaughlin has established a repair shop.

**Hutchinson, Kan.;** Moore Brothers Co. has opened a repair shop and are now ready for business.

**Harrodsburg, Ky.;** The Fort Harrod Garage has been equipped as a Prest-O-Lite service station.

**Allouez, Mich.;** John Kline has opened a garage in the Nordstrom building. It will be modern in all respects.

**Detroit, Mich.;** The Garden Court Garage has been recently established.

**Frederick, Mich.;** George Burke has established a garage.

**Grand Rapids, Mich.;** S. S. Corl has erected a new $35,000 garage.

**Lancaster, Mich.;** The Monitor Auto Co. has built a new garage, 60 by 120 feet.

**Muskegon, Mich.;** J. D. Kitchen has established a new garage.

**Cobin, Minn.;** R. A. Bloencke has opened a new garage.

**Eveleth, Minn.;** Boyle & Mather has established a garage.

**Middle River, Minn.;** Emil Peterson has opened a new garage.

**Ruthton, Minn.;** Axel Palm has opened a garage.

**Silver Lake, Minn.;** A. L. Danek has opened a new garage.

**Lohman, Mo.;** Phil Goldfisch has opened a Gould storage battery service station.

**Sikeston, Mo.;** The General Garage of 141 Centre street, has been equipped with battery service for Prest-O-Lite storage batteries.

**Beaver City, Neb.;** J. I. Foss has erected an accessory house.

**Hildreth, Neb.;** New & Williams have taken a lease of the garage at the south end of Main street.

**Kearney, Neb.;** Hershel Fay has opened a repair shop at Ravenna, Neb.

**Plate Centre, Neb.;** Leander Fangman has purchased a garage.

**Jamestown, N. D.;** Public Service Auto Co. has opened a repair shop.

**Columbus, O.;** A. H. Proctor has established a new garage.

**Cement, Okla.;** Rolland & Pitman has established a garage.

**Selby, S. D.;** Goodwin & Gruett has opened a new garage and repair shop.

**Columbia, Tenn.;** R. S. Hardison has opened a new garage.

**Nashville, Tenn.;** Lewis R. Dorris has opened an automobile salesroom and repair shop at 134 Third avenue, North.

**Abbottsford, Wis.;** J. A. Billing has opened a new garage.

HOOD TIRES
HOOD TIRES
are Better than Good Tires

**A Giant Chauffeur with Red Flag of the Hood Tire Co., Inc., Protecting a Dangerous Curve in Loring Avenue, Salem, Mass.**

### *PLATE FIVE.*

# MODEL SERVICE STATION AND SALES ROOM.

## Two-Story Fireproof Structure Complete with Show Room, Machine and Repair Shops—Generous Spacings and Modern Equipment

**Designed by the Architectural Department of the Automobile Journal Publishing Co.**

THE accompanying plans offer a suggestion for an ideal automobile building to be used by an up-to-date, progressive dealer, and its arrangements permit of its use for practically every branch of the trade in which he can conveniently engage.

Facilities are provided for handling the agency for one or two new cars, and the appointments are such that the dealer may handle used cars and take live or dead storage. Space is also provided for the care, renovation and repair of cars. In fact, an examination of the plans will reveal that a careful survey has been taken of the progressive dealer's requirements, which has been taken into consideration in the design offered.

Having provided for all the practical needs of such a structure, the architect has taken into consideration the value of nice appointments where customers are received and accommodated in addition to providing a suitable facade, which is valuable as an advertising feature, a fact testified to by the thousands of dealers throughout the country who have gone to considerable expense in having highly decorative fronts erected to their buildings whenever their means would warrant it.

This structure, of course, is primarily for a dealer in a fairly large city where business would pay for its erection, maintenance and a profit. It is designed to go on a corner lot 50x100 feet. On the ground or first floor plan is an entrance vestibule, leading off the main street. To the right of the entrance is the show room, where several cars may be exhibited and an accessory case set up with other stock displayed in glass cases on the walls. On the left side of the entrance is the office, which has an entrance leading into the garage floor and shops.

On the side street there is a service door leading directly into the garage and in front of the turn table. This arrangement enables the operator of the car to turn his machine in any direction and run it to any position in the garage, onto the elevator or into the repair shop. The latter room is fitted with two repair pits, although there is sufficient room to handle three cars at a time or possibly four.

Manouvering cars about inside of a building has always been found a troublesome problem, but the arrangement given in these plans, in relation to the layout of the building, seems to offer a simple and easy solution.

In one corner of the garage, out of the way of the passages from the entrances to the other points in the room, is a wash stand conveniently located near both the turntable and elevator, thereby facilitating the washing and storage of a car with little trouble.

A machine shop of ample dimensions is walled off in the rear left hand corner of the building and lighted by a huge skylight in the light shaft extending through the second floor to the roof. There is an entrance to the machine shop from the garage; also one to a passage back of the elevator, which leads across to the repair shop for the convenience of the machines.

On the second floor are toilet accommodations for customers, office employees, salesmen, a large floor area devoted to new and used car storage, supply and locker rooms and toilet for the employees. Entrance to the front of the second floor is reached by the main staircase, which leads into a hall similar to that on the first floor. To the right of this hall is a rest room and toilet for ladies and on the right similar accommodations for gentlemen.

In the centre of the rear end of the second floor is the elevator well, which divides the skylight over the machine shop from the locker and supply rooms and employees toilet. These rooms may be reached from the repair shop by stairs.

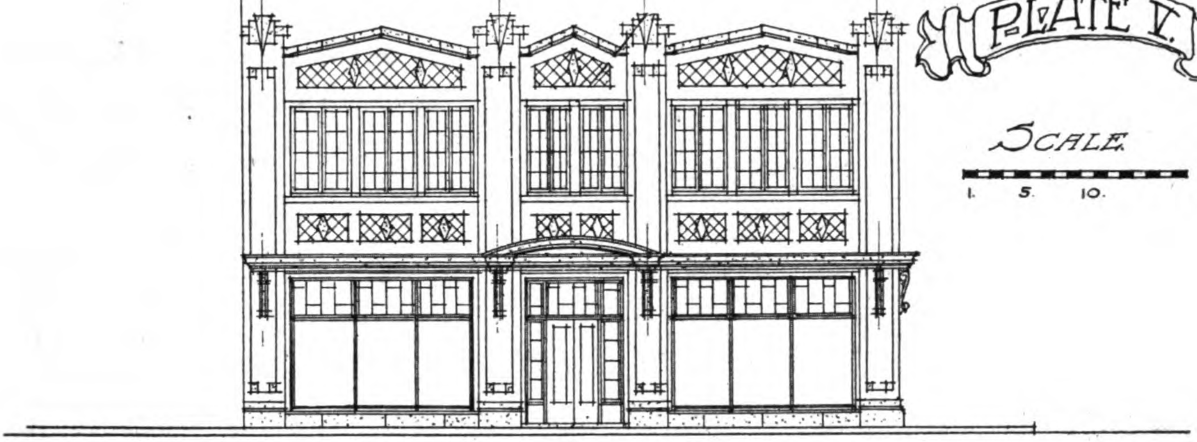
The exterior of the building is of terra cotta with tile inlay, backed with brick. Steel is used for the frame, large girders in the floor and roof supported on steel "H" columns in piers that are spaced as shown by dotted lines on plans. Reinforced concrete floors and roof slab are necessary to make it a fireproof structure.

Lighting and heating equipment must be of standard make and complying with insurance underwriters requirements. Fireproof specifications would also include steel sash throughout and an automatic roller door at the service entrance on the side street.

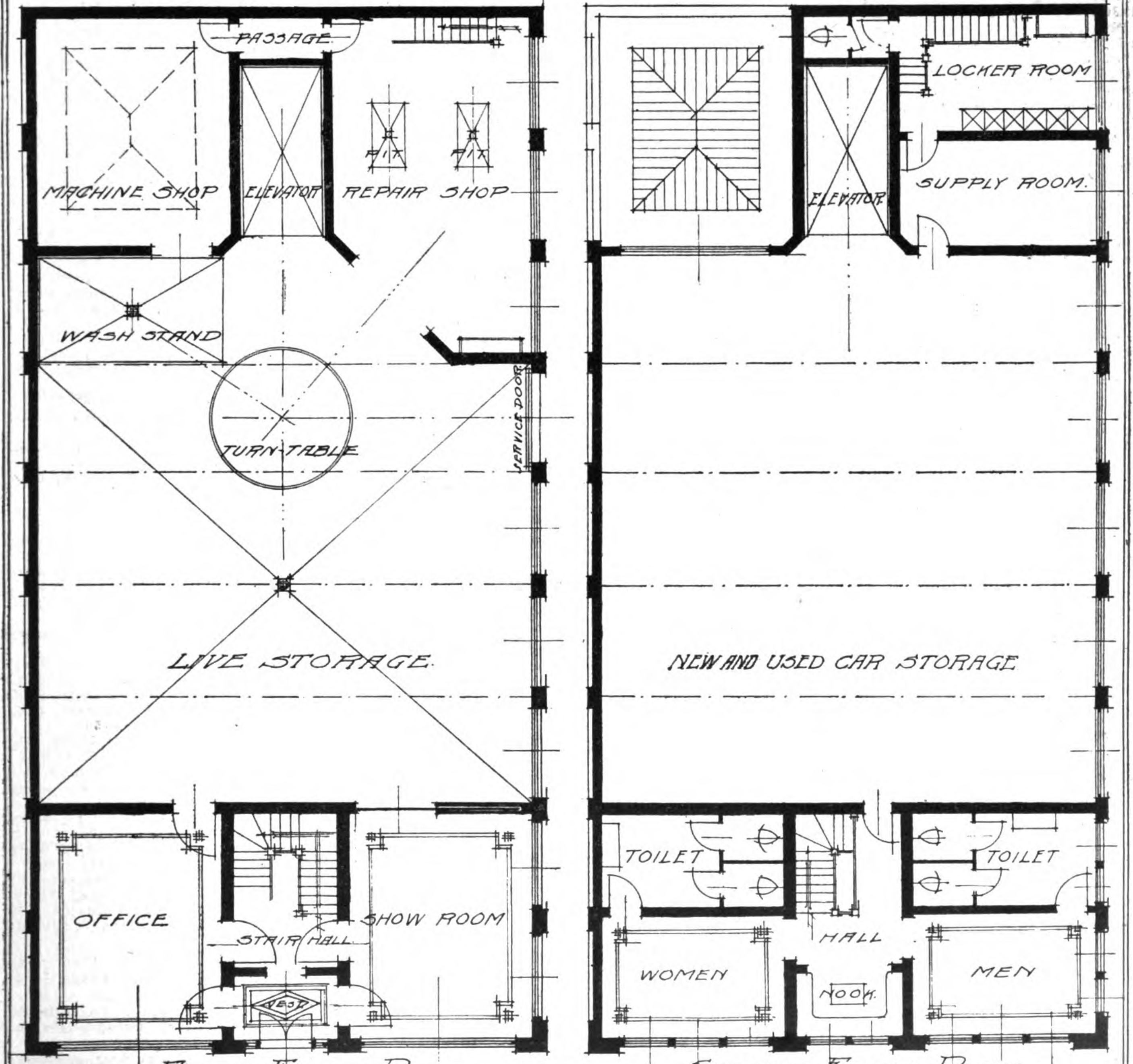
The gas tank and service pumps are located outside the entrance on the side street and are connected up so that cars may be filled either from the inside or transient customers may be accommodated at the curb. Lubricating oil reservoirs or tanks may be placed where found most convenient.

The construction cost of such a building with all modern improvements, of course, would vary according to labor conditions and material supplies in different localities, but a minimum estimate of $25,000 and a maximum of $30,000 would cover the costs approximately.

## PLATE V.



ELEVATION.


PASSAGE
MACHINE SHOP
ELEVATOR
REPAIR SHOP
PIT
PIT
WASH STAND
TURN-TABLE
SERVICE DOOR
LIVE STORAGE
OFFICE
STAIR HALL
SHOW ROOM
VEST.
LOCKER ROOM
SUPPLY ROOM
ELEVATOR
NEW AND USED CAR STORAGE
TOILET
TOILET
HALL
WOMEN
MEN
NOOK

FIRST FLOOR PLAN. SECOND FLOOR PLAN.

# RECORD OF NEW BUILDING PLANS IN JULY

## Contracts Made and Plans Contemplated for Alterations or the Building of Garages, Repair Shops, Service Stations and New Plants.

**Marianna, Ark.;** Griffis & Nehern; two-story garage; $10,000.

**Bridgeport, Conn.;** J. W. Northrop, Court Exchange building; two or three-story garage and storage station; 42x100.

**Bridgeport, Conn.;** Reo Garage, Inc.; 170 Elm street; one-story garage and salesroom, 60x225.

**Hartford, Conn.;** Samuel and Lipman Kutz; one-story public garage, 130x40; $12,000.

**Waterbury, Conn.;** A. M. Larson, 169 E. Main street; one-story garage and storage station, 117x72; $3000.

**Albany, Ill.;** City Garage Company; one-story public garage, 40x80.

**Bellewood, Ill.;** Henry Glos; one and two-story garage and storage station, 60x30; $5000.

**Blue Island, Ill.;** Pronger Brothers; one and two-story garage, 100x160; $2000.

**Chicago, Ill.;** E. R. Ross, care Lexington Hotel, corner 22nd and Michigan avenue; one-story garage, 148x125; $30,000.

**Chicago, Ill.;** N. G. Nicholson, 6414 Minerva avenue; one-story garage, 60x125; $10,000.

**Chicago, Ill.;** Gordon Belsterling, 3841 Osgood street; two-story garage, 100x125.

**Chicago, Ill.;** Frank H. Murphy, 119 E. 37th street; one-story garage, 24x21.

**Chicago, Ill.;** Cohn Brothers, 1133 Throop street; one-story garage, 50x132; $20,000.

**Chicago, Ill.;** A. Henkins, 6651 Wentworth avenue; one-story commercial garage, 75x125; $10,000.

**Chicago, Ill.;** Gibson Motor Car Co., 5424 Kimbark avenue; one-story garage, 100x200.

**Chicago, Ill.;** John O. Pederson, 1015 N. Mason avenue; one-story private garage, 27x32.

**Cicero, Ill.;** J. Kybic; one-story public garage; $10,000.

**Evanston Ill.;** Louis Sherland, 1017 Davis street; one-story garage, 70x180.

**Harvey, Ill.;** Whiting Fary Equipment Co., 140 S. Dearborne street, Chicago; one-story garage, 42x28; $15,000.

**Joliet, Ill.;** Lincoln Highway Auto Repair Station, care G. H. Zinser, 1705 Cass street; one-story garage, 40x100; $10,000.

**Seneca, Ill.;** A. B. Clark; one-story garage and show room, including shop; $15,000.

**Sidell, Ill.;** W. G. Cathcart; one-story garage, 80x90; $12,000.

**Sullivan, Ill.;** B. Whitfield; one-story garage, 53x70x153.

**Watseka, Ill.;** Vennum & Patterson; one-story garage, 50x150.

**Noblesville, Ind.;** Walter Duckwell; one-story public garage, 40x120; $10,000.

**Russiaville, Ind.;** Eikenburg Brothers; two-story public garage, 40x132.

**Winchester, Ind.;** William Batchelor, Court House; one-story garage, 21x22.

**Dubuque, Ia.;** Albert Fluckinger, 3112 Couler avenue; one-story garage, 50x100; $10,000.

**Emmetsburg, Ia.;** Hardy & Abel, 803 France building, Sioux City, Ia.; two-story garage, 48x112; $12,000.

**Mediapolis, Ia.;** Frank Nelson; one-story garage, 50x90; $3500.

**Sioux City, Ia.;** T. A. Foote, 414 United Bank building; one-story garage, 50x150; $7000.

**Freeport, Kan.;** Standard Oil Company; one-story filling station and storage station, 60x100; also one-story garage; $25,000.

**Junction City, Kan.;** Herman Wetzig; one-story garage, 40x40; $5000.

**Cynthiana, Ky.;** R. L. Terry Motor Car Company, organized with W. George Booker, president; W. S. Terry, vice president; R. L. Terry, secretary and manager; two-story fireproof automobile building, 50x150; install complete machine shop and garage equipment; $10,000.

**Louisville, Ky.;** Monarch Automobile Co., 206 E. Broadway; one-story public garage; $20,000.

**Louisville, Ky.;** Brinton B. Davis, 1909 Intersouthern building; three-story public garage; $40,000.

**Louisville, Ky.;** Louisville Funeral Directors' Association, 300 E. Broadway; one-story garage; $5000.

**Houlton, Me.;** Madigan Estate, care Pierce & Madigan, Mansur block; two-story public garage, 60x90; $8000.

**Portland, Me.;** E. E. Amey, 415 Congress street; one-story private garage, 33x22.

**Portland, Me.;** George D. Duffey, 27 Spruce street; one-story public garage, 110x150; $15,000.

**Van Buren, Me.;** I. I. Albert; two-story public garage, 92x50; $6000.

**Baltimore, Md.;** Davis & Lamb, Finance building; five-story automobile industrial building, 50x130; $12,500.

**Baltimore, Md.;** Davis & Lamb, 1219 Fidelity building; one-story garage, 150x130; at Maryland avenue and Oliver street; reinforced concrete; fireproof; daylight type; repair shop; testing track on roof.

**Boston, Mass.;** Walter Lewis, 30 Bellevue street; one-story public garage, 20x20.

**Boston, Mass.;** Albert Geiger, Jr.; 95 Milk street; two-story public garage, 50x200.

**Boston, Mass.;** John De Vito, 160 Liverpool street, East Boston; one-story public garage, 76x79.

**Boston, Mass.;** Dover Realty Association; three-story public garage and storage station, 80.1x130.

**Boston, Mass.;** Andrew Stefano, 6 Everett court, East Boston; one-story public garage, 24x60.

**Boston, Mass.;** William J. O'Conner, 705 Washington street; one-story private garage, 24x28.

**Chicopee, Mass.;** St. Cyr and Landry; one-story public garage, containing 4200 square feet; $12,000.

**Holyoke, Mass.;** Arthur Perron, 62 West street; one-story public garage, 25x47.

**Lee, Mass.;** George F. Haskins; one-story garage, 120x50.

**Littleton, Mass ;** I. M. Hartwell; one-story public garage, 45x55.

**Littleton, Mass.;** George Wood; one-story public garage, 50x60.

**Middleboro, Mass.;** Maxim Motor Co.; one-story garage, 65x120.

**New Bedford, Mass.;** George N. Alden, Jr., 163 Middle street; one-story garage and service station; $8000.

**Somerville, Mass.;** Stephen H. Lewis, 44 Kidder avenue; one-story garage; $3000.

**Somerville, Mass.;** Peter F. McSolley, 1431 Cambridge street, Cambridge, Mass.; one-story public garage, 49x100; $10,000.

**Springfield, Mass.;** E. D. Francis, 25 Harrison avenue; one-story garage, 78x120; $9000.

**Springfield, Mass.;** Gagmer & Angers, 327 Main street; one-story public garage, 70x100; $20,000.

**Worcester, Mass.;** F. Harold Daniels, 2 Regent street; one-story private garage, 25x20.

**Worcester, Mass.;** Jacob Asher, 390 Main street; one-story public garage and show room, 164x145.

**Worcester, Mass.;** Budish & Kaplan, 20 Bridge street; one-story garage, 20x37, and 39x35.

**Birmingham, Mich.;** William McCallum, 369 N. Saginaw street; one-story garage, 64x200.

**Boyne City, Mich.;** Heaton & Hoops; one-story public garage, 71x37.6; $15,000.

**Detroit, Mich.;** Pollmar & Ropes, 602 Sun building; one-story garage, 22x22; $2000.

**Detroit, Mich.;** E. S. Cartage Co., 122 Sherman street; two-story garage, 65x105.

**Detroit, Mich.;** E. Weiner, 1438 Kirby avenue, E.; one-story garage, 60x100.

**Detroit, Mich.;** Victor De Palma Automatic Scale Co., 608 Woodward avenue; one-story garage, 27x100; $14,000.

**Detroit, Mich.;** George W. Cooper, 121 Charlotte avenue; one-story garage, 50x96; $6500.

**Eaton Rapids, Mich.;** M. P. Bromline; two-story service garage, 41x96.

**Frederick, Mich.;** George Burke; two-story garage, 60x140; $10,000.

**Galesburg, Mich.;** A. E. Fair; one-story public garage, 40x100; $10,000.

**Holly, Mich.;** J. R. U. Inskeep; one-story garage, 60x140.

**Milwaukee, Mich.;** L. Korfmann, 687 Prospect avenue; one-story garage, 20x65.

**Saginaw, Mich.;** Hubbell Auto Sales Co., 100 S. Water street; four-story garage and service station, 80x140.

**St. Clair Heights, Mich.;** William T. Porter, 733 Beniteau boulevard; one-story garage, 60x135.

**Minneapolis, Minn.;** J. B. Perry, 4826 Pleasant street; one-story private garage, 24x20; $1200.

**Kansas City, Mo.;** Standard Oil Co.; one-story brick garage; $7000.

**Kansas City, Mo.;** K. S. Cooke; two-story salesroom, 80x108; plate glass and terra cotta front; $50,000. Lessee, Babst Motor Co., Ford agency, 3309 Frost avenue.

**Kansas City, Mo.;** Samuel F. Baker, Ford agency; three-story garage, 50x160.

**Kansas City, Mo.;** James McQueeny; one-story garage; $10,000.

**St. Louis, Mo.;** O. J. Boehmer, 3500 Palm avenue; one-story public garage, 35x75; $4000.

**Bloomfield, Neb.;** Gossard & Alderman; two-story garage, 50x140; $20,000.

**Cedar Rapids, Neb.;** John Farley; two-story garage, 50x100; $18,000.

**Crookston, Neb.;** George Allard; one-story garage, 50x70; $4000.

**Doniphan, Neb.;** W. R. Augustin; three-story garage, 62x142; $10,000.

**Grand Island, Neb.;** Glass & Evans Auto Co.; two-story garage, 66x132; $30,000.

**Omaha, Neb.;** H. Pelton, 2205 Farnam street; two-story garage, 103x171.

**Camden, N. J.;** C. F. Wolf; two-story garage, 56x100; $9000.

**Glen Garden, N. J.;** New Jersey Sanitorium; two-story garage, 25x50; $5000.

**Newark, N. J.;** William Grohmann, S. E. corner 16th avenue and 12th street; one-story public garage, 34x94; $7500.

**Newark, N. J.;** Tenrose Holding Co.; one-story public garage, 50x119; $8000.

**Newark, N. J.;** Dr. A. R. Bianchi, 104 Seventh avenue; two garages, one-story each, 44x44 and 23x18; $4000.

**Palisade, N. J.;** F. Ducondray; 1½-story garage, 22x28.

**Albany, N. Y.;** Joseph J. Gander, 61 State street; one-story garage, 32x141; $5000.

**Brooklyn, N. Y.;** Marie Clements, 83 Rapelyea street; one-story garage, 25x100.

**Brooklyn, N. Y.;** Tobias Goldstone, 50 Graham avenue; one-story garage, 50x100; $15,000.

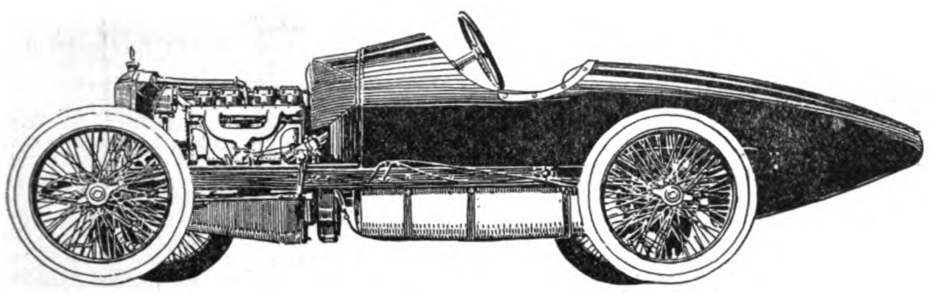
**Brooklyn, N. Y.;** Schutte Brothers, 1240 Flatbush avenue; one-story garage, 17x64; $3000.

**Brooklyn, N. Y.;** Laspia & Salvati, 525 Grand street; one-story garage, 46x180; $10,000.

**Brooklyn, N. Y.;** Morris Whinston, 459 Stone avenue; one-story garage, 25x100; $6000.

**Brooklyn, N. Y.;** P. McGonagle, Fourth

# *Frontenac Aluminum Racer*



**The Frontenac Motor Developed by Louis Chevrolet, Weighing 390 Pounds Complete, Carries 354 Pounds of Fuel and Water for a Six-Hour Run—Complete Technical Description in the Automobile Journal of July 10, 1917.**

avenue and 11th street; one-story garage, 25x100.

**Brooklyn, N. Y.;** Robert Vogt, 35 Emerson place; one-story garage, 30x100; $6000.

**Brooklyn, N. Y.;** Thomas Bennett, 52nd street and Third avenue; one-story garage and storage station, 20x100; $5000.

**Brooklyn, N. Y.;** Rosenthal Engineer and Contracting Co., 165 Hooper street; one-story garage, 18x82; $10,000.

**Brooklyn, N. Y.;** Sophie Hilfreich, 25 Flushing avenue; two-story garage and show room, 25x72; $5000.

**Buffalo, N. Y.;** Frederick V. Simon, 111 Herkimer street; one-story private garage, 50x108; $6000.

**Johnstown, N. Y.;** Lewis K. Maylender, Jr., 10 E. State street; two-story garage, 70x100; $25,000.

**Long Island City, L. I., N. Y.;** C. Gallagher, 412 Academy street; one-story garage, 40x40.

**Long Island City, L. I., N. Y.;** National Sugar Refining Co.; one-story garage, 67x60; $11,000.

**Mt. Vernon, N. Y.;** Clarence Ware; one-story garage, 60x64; $3000.

**New York, N. Y.;** Anna R. Finch, 51 Chambers street; one-story garage, 100x100; $20,000. Lessee, Kloak Construction Co., 616 E. 108th street.

**New York, N. Y.;** Russo India Realty Co., care Hiovani Russo, 226 Lorillard place; one-story garage, 50x100; $10,000.

**New York, N. Y.;** L. Schnurmacher, S. E. corner First avenue and 62nd street; two-story garage, 85x130; $40,000.

**New York, N. Y.;** Samuel Fensterhein, 305 E. Third street; one-story garage, 50x100; $13,000.

**New York, N. Y.;** Advance Garage, 376-84 W. 213th St.; one-story garage, 125x100; $20,000.

**New York, N. Y.;** H. B. and C. N. Whinston, 509 Willis avenue; one-story garage, 35x100; $4000.

**New York, N. Y.;** Tremont Webster Building Co., 1662 Boston road; one-story garage, 75x164, 82x140 and 40x50; $150,000.

**New York, N. Y.;** De Rose and Cavaliere, corner Third avenue and 148th street; one-story garage, 50x100.

**Schenectady, N. Y.;** C. G. Van Rensselaer, 505 State street; one-story garage, 22x90; $4500.

**Schenectady, N. Y.;** George W. Jones, 28 Cleveland street; one-story garage, 22x23; $2000.

**Schenectady, N. Y.;** C. G. Van Rensselaer, 505 State street; one-story garage, 37x35; $3000.

**Syracuse, N. Y.;** Fayette Park Realty Corp., 120 W. Jefferson street; one-story garage and service station; $20,000.

**Syracuse, N. Y.;** J. J. Clark, Kirk building; two-story public garage, 44x112; $30,000.

**Syracuse, N. Y.;** John Marinim, 187 W. Ostrander St.; one-story garage, $18,000.

**Utica, N. Y.;** Otis Motor Sales Co., 509 Kent street; two-story automobile storage building, 100x130.

**Yonkers, N. Y.;** Van Ness Brothers, 506 S. Broadway; one-story garage, 50x77; $8000.

**Cherryville, N. C.;** D. M. Brittain; brick garage; sheet iron roofing; cement floors; electric light; 40x100; $2000. Lessee, Matthew A. Stroup.

**McHenry, N. D.;** King & Bruno; one-story public garage, 50x100.

**Plaza, N. D.;** C. L. Holt; one-story public garage, 50x100.

**Akron, O.;** Akron National Auto Co.; two-story public garage, 44x120; $45,000.

**Cincinnati, O.;** R. A. Powell, Provident Bank building; one-story garage, 60x100.

**Cincinnati, O.;** Frederick Pagel, 831 W. 8th street; one-story commercial garage, 30x100.

**Cincinnati, O.;** R. A. Powell, Provident Bank building; one-story garage, 20 feet high, 52x106.

**Cincinnati, O.;** M. L. Buchwalter; one-story private garage, 24x24.

**Cleveland, O.;** H. T. Jeffery, 408 Union building; one-story garage; $8000.

**Cleveland, O.;** Straus & Uherstine, 876 E. 105th street; one-story garage, 80x142; $15,000.

**Columbus, O.;** B. of St. Realty and Improvement Co., 215 High street; six-story garage, 66x82.

**Columbus, O.;** Morris Peterman, Gobey building; six-story garage, 20x20.

**Cuyahoga Falls, O.;** Robinson Auto Garage Co.; one-story garage and salesroom, 45x100; $8000.

**Georgetown, O.;** Garbor & Woodward, Union Central building; one or two-story commercial garage; $12,000.

**Marietta, O.;** John H. Riley, 1 Tiber way; three-story automobile storage station, 40x50; $3500.

**Elk City, Okla.;** Jonas Heatund & Son; one-story garage, partly fireproof, 140x75; about $15,000.

**Okmulgee, Okla.;** Smith, Rea & Lovitt, 602 Finance building, Kansas City, Mo.; two-story garage, 70x100; $25,000.

**Bellevue, Pa.;** C. W. McCall, 520 Dawson avenue, and E. A. Sharman, 42 Meade street; two-story commercial garage, 60x145; $35,000.

**Brooksville, Pa.;** L. A. Leathers; two-story commercial garage, 86x90; $15,000.

**Donora, Pa.;** E. J. Campbell; two-story commercial garage, 44x100; $9000.

**East Mauch Chunk, Pa.;** R. O. Gasser; one-story garage, 42x50; $2500.

**Eddystone, Pa.;** John M. Kennedy, 1001 Chestnut street, Philadelphia; one-story garage, 50x110.

**Erie, Pa.;** Rudolph Jarodki, 128 State street; one-story private garage, 60x24; $6000.

**Glenside, Pa.;** F B. Fleming, Liberty building, Philadelphia; one-story garage, 60x75; for Standard Garages, Inc.

**Gwynedd Valley, Pa.;** Ralph B. Strassburger; two-story garage, 22x65.

**Harrisburg, Pa.;** Alexander S. Miller, 18th and State streets; four-story garage, 126x108; $4000.

**Perkasie, Pa.;** William Kramer, 134 N. Seventh street; one-story garage, 40x100; $6000.

**Pittsburg, Pa.;** J. R. Skagg, 5882 Douglas avenue; one-story private garage, 15x12; $1500.

**Pittsburg, Pa.;** Dr. Cadwallader Evans, 1045 S. Negley avenue; one-story commercial garage, 48x70.

**Pittsburg, Pa.;** Otto Boitlor, 2129 Wright way; one-story private garage, 22x36; $1500.

**Philadelphia, Pa.;** Chester O. Ray, 1035 Ridge avenue; one-story automobile show room and shop, 38x162; $20,000.

**Philadelphia, Pa.;** Charles N. Forsythe, 3417 N. 16th street; two-story garage, 52x200; $60,000.

**Philadelphia, Pa.;** Armando & Alcantara, 2962 N. Bailey street; four-story garage, 103x40.

**Philadelphia, Pa.;** Frederick A. Rakestraw, 226 Chestnut street; two-story garage, 24x24.

**Philadelphia, Pa.;** William Biren, 2019 N. 17th street; one-story garage, 26x21.

**Philadelphia, Pa.;** D. Horwitz, S. E. corner Third and Carpenter streets; one-story garage, 50x140; $14,000.

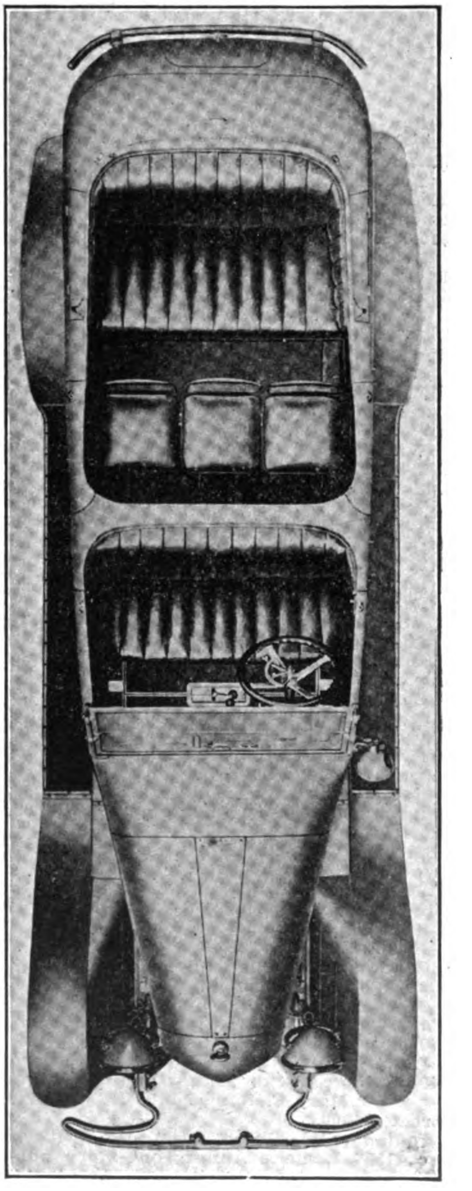
**Philadelphia, Pa.;** S. B. Davis, York road and Green lane; one-story garage, 14x22.

**Philadelphia, Pa.;** Armenak Mahijonirma, 60th and Walnut streets; two-story garage and shop, 40x93.

**Philadelphia, Pa.;** S. K. Neuhauer, 1118 Chestnut street; one-story garage, 194x157x116; $20,000.

**Philadelphia, Pa.;** R. A. Humphreys, 1020 Callowhill street; one-story garage, 20x120.

**Philadelphia, Pa.;** George N. McClatchey, 5906 Lansdowne avenue; one-story garage, 100x100.



**Plan View of New Pathfinder 12-Cylinder Seven-Passenger Touring Roadster.**

**Ridgeway, Pa.;** I. H. Lipsch; one-story commercial garage, 40x110 and 43x65; $20,000.

**Rydal, Pa.;** W. E. Hering, 112 N. 12th street, Philadelphia; two-story garage, 25x40.

**Souderton, Pa.;** R. B. Goettler, 22 Summit street; 1½-story garage, 12x20; $1000.

**St. Davids, Pa.;** Thomas W. Hulme; one-story garage, 18x22; $1500.

**Wyncote, Pa.;** Alan H. Reed; one-story garage, 12x19.

**Pawtucket, R. I.;** H. C. McDuff; one-story public garage, 56x96; $7000.

**Providence, R. I.;** A. S. Ogassian, 258 Plain street; one-story public garage, 40x60; $2500.

**Memphis, Tenn.;** Roas Lee; one-story garage at 251 Monroe street; $1500.

**Memphis, Tenn.;** G. M. Shaw & Co.; one-story brick and concrete garage; $15,000.

**Memphis, Tenn.;** Dave Dermon, Builders' Exchange; one-story garage; $10,000.

**Memphis, Tenn.;** Frank F. Hill, care Union and Planters' Bank and Transit Co.; one-story garage; $40,000.

**Memphis, Tenn.;** Allen Motor Car Co.; one-story brick and stone garage and display room, 60x140; $20,000.

**Austin, Tex.;** T. B. Watons; one-story garage, 46x128; composition roofing; concrete floor; gas and electric lighting; $6200.

**Hillsboro, Tex.;** H. H. Crouch, Waco, Texas; one-story brick garage and sales room, 50x100; on West Elm street; cement floors; electric lighting; cement sidewalks. Lessee, Overland Auto Sales and Garage.

**Richmond, Va.;** G. G. Williams; one-story brick garage; $20,000.

**Richmond, Va.;** P. J. Beatty, Boulevard apartments; one-story garage, 56x26x10; $4000.

**Richmond, Va.;** C. F. Sauer; one-story brick garage; $7775.

**Clarksburg, W. Va.;** Morgan & Breternitz; one-story garage, 50x150; $8000.

**Milwaukee, Wis.;** Callaway Fuel Co., corner North and E. Water streets; one-story garage; $3000.

**Milwaukee, Wis.;** Henry E. Schuette, 1175 Second street; two-story garage and shop, 24x34, at 173 Second street; $15,000.

**Milwaukee, Wis.;** Hugo Koeffer, 909 Pabst building; one-story garage, 50x60; $2500.

**Milwaukee, Wis.;** Milwaukee Western Fuel Co.; two-story private garage, 30x50; $15,000.

# CONTRACTS RECENTLY AWARDED

## Garage and Service Station Constructions That Are Now Under Way or Soon Will Be

**Denver, Col.;** Harry Mabrey, 3150 Vine street; one-story garage; for John C. Skinner; $3000.

**Denver, Col.;** Charles Hall, 630 Oneida street; one-story garage, 75x95; for Continental Oil Co., 17th and Glenarm streets; $10,000.

**Bridgeport, Conn.;** Schwarz Brothers, 95 River street; one-story public garage, 45x79; for Howland Dry Goods Co.; $7500.

**Hartford, Conn.;** A. L. Hills, Hills building; one-story garage, 60x150; for David Speigal, 98 Hudson street; $20,000.

**New Haven, Conn.;** Samuel S. Kolnick, 159 Columbus avenue; one-story public garage, 50x75; for S. H. Gudiu, 222 Congress avenue; $5000.

**Washington, D. C.;** M. A. Weller Co., 701 Equitable building; one-story brick and concrete garage; at 421-23 New York avenue, N. W.; for Marvin Wesley; $8000.

**Washington, D. C.;** Beahm & Rice, 617 14th street, N. W.; 30 garages in rear 1424 Irving street, N. W.; each one-story brick; fireproof, concrete floors, electric lighting; for Lewis S. Kann; $10,474.

**Atlanta, Ga.;** C. E. Bowen; brick garage and salesroom, 90x100; electric elevator; appliances for cleaning and washing cars.

**Chicago, Ill.;** Alson & Co., 3807 N. Clark street; one-story garage, 50x65; for T. B. Maginnes, 4648 Greenview avenue; $3000.

**Evanston, Ill.;** George Ristine; one-story garage, 22x22; $1000.

**Evanston, Ill.;** L. B. Lucas, 2244 Sheridan road; two-story private garage, 20x28; $2000.

**Farmer City, Ill.;** Hyatt, Schell & Jones; two-story garage, 56x110; $10,000.

**Farmington, Ill.;** F. L. Boker, Abingdon, Ill.; one-story garage, 64x96; for E. L. Boher, Galesburg, Ill.; $10,000.

**La Salle, Ill.;** Robert McIntosh, 861 O'Connor avenue; one-story garage; 60x115; for Castendyck, Hamel Co.; $8000.

**Murphysboro, Ill.;** G. W. Peters; one-story garage, 50x146; for Otis F. Glenn; $8000.

**Indianapolis, Ind.;** Charles S. Pollard, 3406 College avenue; one-story public garage; for Mary C. Rauch, 2120 N. Meridian street; $4000.

**Indianapolis, Ind.;** Lynn B. Millikan, Inc., 1556 Lemeke Annex; one-story public garage; for Gerritt A. Archibold; $15,000.

**Indiana Harbor, Ind.;** Julius Friedman, 4605 Forsythe avenue, East Chicago; one-story garage, 93x120; $12,000.

**Albert City, Ia.;** Thomas Park; one-story garage, 50x80; for A. H. Nelson; $5000.

**Sioux City, Ia.;** Kruck & Smith, 1215 Wall street; one-story garage, 26x50; for G. J. Savidge, 710 Court street; $2000.

**Washington, Ia.;** J. F. Duffy; one-story garage; $25,000.

**Webster City, Ia.;** Gus Ahrens; one-story garage, 66x132; for Anyder Kayser; $10,000.

**Covington, Ky.;** Northcott Brothers; one-story garage, 25x50; for Louis Marx; $2500.

**Baltimore, Md.;** Consolidated Engineering Co., Calvert building; one-story garage, 48x185; for W. A. Harris, 3838 Guilford avenue; $12,000.

**Cambridge, Md.;** Thomas Brahouns; two-story garage, 50x150; for Noble & Jones; $6000.

**Boston, Mass.;** Elm Hill Garage Co., Fidelity Trust building; one-story public garage, 105x200.

**Boston, Mass.;** Sarah M. Perkins; one-story public garage, 92x100; $18,000.

**Boston, Mass.;** Evatt Construction Co., 161 Devonshire street; two-story public garage, 50x200; for Albert Geiger, Jr., 95 Milk street.

**Boston, Mass.;** Deveney Brothers; one-story garage, 60x100; $25,000.

**Brookline, Mass.;** Hardy & Streeter, 95 Milk street, Boston; one-story public garage, 89x70; for Harold E. Sherman; $22,000.

**Fall River, Mass.;** Arthur Pigeon, 1217 Davel street; one-story garage, 48x50; for Peter Letowineau, 365 Lindsey street; $4000.

**Fitchburg, Mass.;** C. Romano; one-story public garage, 40x80; for Wray Falwell, 202 Summer street; $5500.

**Methuen, Mass.;** E. A. Dick Co., 209 Ferry street; one-story public garage, 49x100; for Dr. Charles Burgess, 37 Whitman street, Lawrence, Mass.; $10,000.

**Somerville, Mass.;** Alfred M. Pride, 150 Hudson street; 23 one-story garages, 80x90; for Wickpam & Roe; $6800.

**Springfield, Mass.;** Edward T. Davis, 898 Bridge street; one-story public garage, 96x116; $50,000.

**Flint, Mich.;** Staver & Bupeauk, 140 Stockdale street; one-story garage, 40x90; for Dan Weaz; $4500.

**Mt. Pleasant, Mich.;** Hodges & Ferris; one-story garage, 44x120; for Johnson Brothers; $8000.

**Belleplaine, Minn.;** John Schanus; two-story public garage, 50x110; for Dooly & McRaith; $20,000.

**Memphis, Minn.;** Julius Anderson Co., 2525 Bloomington avenue; one-story public garage, 56x76; $5000.

**Minneapolis, Minn.;** Alfred Arneson, 3626 S. 41st street; one-story public garage and storage station, 76x140; for Rea Realty Co., 240 McKnight building; $4000.

**Minneapolis, Minn.;** L. G. Clausen, 1706 E. Lake street; one-story public garage, 40x91; $8000.

**St. Paul, Minn.;** Butler Brothers, 1002 New York Life building; one-story public garage, 350x124; for Joy Brothers Motor Car Company, 173 E. Sixth street; $75,000.

**Ironton, Mo.;** J. H. Baugher, Sikeston, Mo.; one-story garage, 48x90; for Fletcher & Barger; $6000.

**St. Louis, Mo.;** J. W. Wise, Victoria building; one-story garage, 24x28; for A. W. Niedenuhaus, 4937 Berlin avenue; $2500.

**Fairbury, Neb.;** C. G. Gathin Co.; one-story garage, 66x150; $20,000.

**Omaha, Neb.;** Silas P. Wolff, 3024 Ames avenue; one-story garage, 44x132; for Edward Cackley, 2427 Pratt street; $7000.

**Omaha, Neb.;** Henry Behrman, Florence, Neb.; one-story garage, 81x132; for John C. Barnard; $15,000.

**Oxford, Neb.;** H. V. Brindler; one-story garage, 75x120; for C. S. Prime; $15,000.

**Atlantic City, N. J.;** H. G. Scull, Speen building; one-story garage, 36x40; for Somers Dougherty, 12 S. Indiana avenue; $2000.

**Atlantic City, N. J.;** Charles S. Carson, Linwood, N. J.; two-story garage, 20x86; for Hotel Breakers Co.; $10,000.

**Camden, N. J.;** Muckett Construction Co., 6th and Market streets; one-story garage, 20x25; for J. Beck Tyler, 522 Narjet street; $2000.

**Camden, N. J.;** E. A. Eichfeld, 1700 Mt. Ephraim street; one-story garage, 20x22; for Mark D. Bufifant, 19 Broadway; $2000.

**Camden, N. J.;** Harry Hemming, 431 N. Third street; one-story garage, 16x16; for Dr. William R. Cornell, S. W. corner Fifth and State streets; $1500.

**Jersey City, N. J.;** Joseph Jewkes & Sons, 676 Montgomery street; one-story public garage, 50x100; for Dr. R. W. A. English, 2391 Boulevard; $8000.

**Ocean City, N. J.;** F. A. Demaris; one-story garage, 20x20; $1500.

**Brooklyn, N. Y.;** A. L. Fogel, 860 St. Johns place; one-story garage, 51x185; for Orient Co., Inc., 753 Postrand avenue; $20,000.

**Elmira, N. Y.;** Ross Vulcanizing and Battery Co.; two-story garage and shop, 60x80; $6500.

**New York, N. Y.;** Frederick D. Menke, 280 Madison avenue; one-story private garage, 43x25 and 33x21; for Robert McKeown; $6000.

**New York, N. Y.;** Story & Frickinger, 5 Great Jones street; five-story garage and storage station, 26x90; for Frederick T. Hopkins, 37 Great Jones street; $35,000.

**Albemarle, N. C.;** N. A. Moody; one-story garage, 50x80; tin or tar roofing; wood floors; for N. G. Arey; $4000.

**Cincinnati, O.;** A. Bell, 3562 Trimble avenue; one-story private garage, 20x21; for Alfred Knight, care Fleichmann Co., 419 Plum street; $15,000.

**Cleveland, O.;** E. J. Andrews, 821 Citizens building; two-story private garage, 33x25; for F. W. Steinen, Leader-News building; $2500.

**Cleveland, O.;** H. Weltman, 6108 Scovill avenue; one-story garage, 70x170; for Lev Brothers, 3704 Woodland avenue; $12,000.

**Cleveland, O.;** Master Mullen Co., Electric building; two-story garage and salesroom, 60x200 and 100x200; for Glengariff Realty Co., Erie building.

**Cleveland, O.;** A. Soros, United Bank building; one-story public garage, 100x100; for G. W. Barbul, 5103 Detroit street; $16,000.

**Marietta, O.;** Levi Cowell, 823 Fourth street; one-story private garage, 27x27; for J. H. Thompson, 116 Washington street; $2500.

**Nowata, Okla.;** D. W. Wintrode, Coffeyville; one-story garage, 75x150; for Mrs. Laura M. Heffuer; $10,000.

**Sapulpa, Okla.;** George Kadahe; one-story brick garage on S. Main street, 100x140; $12,500.

**Tulsa, Okla.;** J. R. Sharp; two-story private garage, 26x56; $30,000.

**Bellevue, Pa.;** C. A. Baldwin, 214 Maripoe street, Pittsburg, Pa.; one-story private garage; for W. D. Reed; $1500.

**Bellevue, Pa.;** C. A. Baldwin, 214 Maripoe street, Pittsburg, Pa.; one-story private garage, 15x20; for Joseph C. Heckman, 327 Home avenue.

**Lansdowne, Pa.;** John J. Murphy & Co., 1139 S. Wilton street, Philadelphia; one-story garage; $3000.

**Pittsburg, Pa.;** E. F. Guthrie, 1118 South avenue, Wilkensburg, Pa.; one-story private garage, 24x22; for J. H. Aiken, 1717 Beechwood boulevard; $1600.

**Pittsburg, Pa.;** W. J. Hein, 200 Marshall avenue; one-story private garage, 35x20; for W. T. Adair, 233 Marshall avenue; $2000.

**Philadelphia, Pa.;** R. W. Troeniner; one-story hollow tile garage, 14x20; at 1221 Somerville avenue; for B. F. Ellis; $1080.

**Philadelphia, Pa.;** Swingle Brothers; one-story garage, 22x24; southeast corner Washington lane and Ogoutz avenue; for E. F. Swingle; $1000.

**Philadelphia, Pa.;** John O. Fallon; one-story brick garage, 18x47; at 6044 Larchwood avenue; for Frank C. Ervin; $2100.

**Philadelphia, Pa.;** John P. Fallon; two iron on iron frame and brick community garages, 30x25 and 18x18; west side 62nd street, south of Irving street; for H. P. Clark; $2000.

**Philadelphia, Pa.;** J. H. Laverell; one-story brick garage, 97x20; rear of 5108-22 Hadfield street; for William D. Laverell; $2000.

**Philadelphia, Pa.;** M. J. Benamy; one-story brick garage, 12.6x25; at 3125 Hollingsworth street; for M. Shore; $620.

**Philadelphia, Pa.;** Albert Berry, 6076 Ridge avenue; one-story garage, 10x18; $2000.

**Philadelphia, Pa.;** George W. Allibone; one-story brick garage, 30x27; southeast corner Water and Moore streets; for N. H. O. Denelle; $750.

**Philadelphia, Pa.;** Michael Glaser; one-story brick garage, 29.6x100; at 1528-30 Cadwallader street; $800.

**Philadelphia, Pa.;** Charles Smith & Son; eight one-story brick garages, each 10x16; west side 49th street, south of Arch street, and four same east side St. Bernard street, north of Market street; $4200.

**Philadelphia, Pa.;** Calvin W. Rogers; six brick garages, 10x16.6 each; south side Wyalusing avenue, east of Paxon street; $1800.

**Philadelphia, Pa.;** James N. Mitchell; one one-half stone garage, 20x18; northwest corner Lincoln drive and Springer street; $1000.

**Philadelphia, Pa.;** Mowrer Brothers; one-story garage, 14x22; at 2411 North 52nd street; for Norman C. Ives; $600.

**Philadelphia, Pa.;** M. Moister & Co.; one-story iron on iron frame garage, 18x20.5; south side Erie avenue, west of B street; for S. S. E. Company; $535.

**Philadelphia, Pa.;** H. M. Irwin; one-story brick garage, 18.6x19; at 3507 Baring street; for Dr. R. H. D. Swing; $1050.

**Philadelphia, Pa.;** Rush Brothers; one-story brick and stone garage, 10x19; rear of east side of Saul street, south of Wakeling street; for J. R. Edgar; $800.

**Philadelphia, Pa.;** Samuel R. Detwiler; two-story garage and shop, 26x22; at 929 N. Broad street; $3400.

**Philadelphia, Pa.;** George R. Dewees; one-story brick garage, 24.3x51.9; east side of American street, south of Clarkson avenue; for Adam K. Walch; $1860.

**Philadelphia, Pa.;** Harry Hetzel; one-story brick garage, 19x17; at 1415-17 Adams avenue; for Otto Vandelbagard; $750.

**Philadelphia, Pa.;** Edward B. Miller; one-story brick garage, 22x22; east side Warnock street, north of Wingohocking; for John F. Stoelker; $1000.

**Philadelphia, Pa.;** Henry P. Schneider; one-story brick garage, 66x182; at 314-18 South Fourth street; for Bankers' and Merchants' Garage Co.; $20,000.

**Philadelphia, Penn.;** Harry Murphy; one-story stone garage, 28x38.10; southwest corner Wisshickon avenue and Westview street; for F. Royal Hannett; $3400.

**Philadelphia, Pa.;** Clarence Gallagher; one-story brick garage, 40x20; south side Irving street, east of 40th street; $1500.

**Philadelphia, Pa.;** Henry P. Schneider; one-story brick garage, 50x22; east side Laurens street, north of Queen street; for I. D. Mullen; $2300.

**Philadelphia, Pa.;** Alan G. Smith; one-story brick garage, 12x18; at 6384 Sherwood road; for Dr. Charles R. Mattson; $650.

**Philadelphia, Pa.;** J. D. Fisher, two and one-story brick garage and storage station, 92.10x110; southeast corner 56th and Chestnut streets; for Wayne & Corpett; $18,000.

**Philadelphia, Pa.;** Edward B. McCall; one-story stone garage, 20x20; northeast corner Chelten and Park avenues; for John D. Reeves; $850.

**Philadelphia, Pa.;** Alexander Chambley; one-story garage, 29x92; at 1322-26 Mt. Vernon street; for the H. C. Gray Co.

**Philadelphia, Pa.;** E. Warshaw-Sky, 810 Marshall street; two-story garage, 67x100; for H. Feldman, Lincoln building; $11,000.

**Reading, Pa.;** H. J. Randenbush, 1324 Perkiomen street; one-story garage, 25x20; for Carpenter Steel Co., 42 Exeter street; $3000.

**Wallingford, Pa.;** Horace Jackson, 1115 Kerlin street, Chester, Pa.; 1½-story garage, 20x22; $1500.

**Wilkes-Barre, Pa.;** Shipherd Construction Co.; two-story garage, 30x50; for F. M. Chase, 133 N. River street; $10,000.

**Providence, R. I.;** E. A. Farr, 118 Webster avenue; one-story garage, 20x20; for James A. Burns, 68 Princeton street.

**Providence, R. I.;** B. Maguire Co., Turks Head building; one-story private garage. 29x25; for Mrs. J. Harris, corner Angell and Cooke streets; $3000.

**Memphis, Tenn.;** R. F. Cresson, Builders' Exchange; one-story garage; for Dave Dermon, 615 Monroe avenue; $10,000.

**Port Arthur, Tex.;** F. H. Drunagle; two-story brick garage; 28,000 square feet of floor space; show room, 69x40; install repairing equipment; $22,000.

**Norfolk, Va.;** Nash Jones Construction Co.; three-story garage, 50x150; for Brandt Motor Corp.

**Richmond, Va.;** Bass Brothers, 708 Bainbridge street; one-story garage, 28x90x24; for C. F. Sauer, corner Broad and Meadow streets; $7000.

**Richmond, Va.;** C. H. Archer, 2515 Hanover avenue; one-story garage, 41x21x10; for Mrs. Blackwell, 1605 Hanover avenue; $1500.

**Bluefield, W. Va.;** D. J. Phipps, Roanoke, Va.; two-story private garage, 24x30; for O. C. Jenkins; $3000.

**Milwaukee, Wis.;** R. Zils, 1317 Fredericks place; one-story garage, 20x95; for Edward Schildknecht, 3026 Walnut street; $2500.

**Milwaukee, Wis.;** Newton Engineering Co., 185 Mason street; two-story garage, 30x110; for Magnetic Realty Co.; $30,000.

**Milwaukee, Wis.;** Dahlman Construction Co., Majestic building; one-story garage, 25x45; for Richardsen Phoenix Mfg. Co.; $1500.

**Oçonomowoc, Wis.;** Schroeder & Timmell, 502 Summit street; one-story garage, 66x126; for F. W. Leaf, 411 Summit street.

**Wausau, Wis.;** Theodore Kohl, 224 E. Jefferson street; one-story private garage, 22x22; for A. Kickbush, 4 Washington street; $1500.

## Factories, Garages and Repair Shops.

**Fresno, Cal.;** The Willys-Overland Co. will erect a large building at a cost of $70,000; the building will be devoted to sales and service purposes.

**Gooding, Idaho;** Gooding Motor Co. will erect a new garage. O. F. Atterberry is manager.

**Twin Falls, Idaho;** Intermountain Auto Co. will open in temporary quarters.

**Chicago, Ill.;** Gibson Motor Car Co., 929-30 East 47th street, will erect a new $50,000 garage at the above address.

**Gibson City, Ill.;** Carson & Healey will erect a garage 50 by 160 feet. W. A. Kreitzer will be manager.

**Baxter, Ia.;** Marion Neal will open a new garage.

**Spencer, Ia.;** Flaherty & Ryan will open an auto tire vulcanizing shop.

**Ann Arbor, Mich.;** John Goodspeed will open a garage.

**Cape Girardeau, Mo.;** The Oakland Motor Sales Co. is a new concern which was recently formed and will occupy quarters on Main street.

**Edina, Mo.;** Delaney Brothers will erect a new 74x125 foot garage.

**Fulton, Mo.;** Boulware H. Jameson is erecting a new garage at Court and Sixth streets.

**Humansville, Mo.;** Humansville garage is building a new garage.

**Sedalia, Mo.;** Donath & Todd will open a garage. They are the proprietors of the Interstate garage at 209-11 East Third street.

**Nevada, Mo.;** Tourlillott & Gorwitz, 805 Cherry street, is building a new garage.

**Verdon, Neb.;** Dee W. Hart will open a garage.

**Lawton, N. D.;** Lawton Implement Co. is erecting a garage 36x80 feet.

**Tulsa, Okla.;** The Universal Motor Co. will erect a four-story assembling plant to be 140x150 feet.

**Dallas, Tex.;** The Firestone Sales Agency has begun the erection of a new building.

**Bowler, Wis.;** Theodore Buettner and O. Metz will engage in the garage business.

## Alterations, Improvements and Additions.

**Bakersfield, Cal.;** The Downtown garage has been remodeled.

**St. Anne, Ill.;** The Therien-Mercier Co. have purchased the storeroom next to the postoffice and will remodel the building into a garage.

**Pleasantville, Ia.;** Oren J. Spatli is having a new addition built to the garage. He has the agency for the Overland cars.

**Council Grove, Kan.;** Carl Lamb is building an addition to his garage.

**Eldorado, Kan.;** D. E. Thompson, Kille building, N. Central avenue, will remodel the building for the Overland agency.

**Junction City, Kan.;** Birch garage is being remodeled.

**Grand Rapids, Mich.;** The Burtless Motor Sales Co. has remodeled the show room.

**Scottville, Mich.;** Eric Thorne has rented a building and will remodel it into a garage.

**Cameron, Mo.;** The Tanner Motor Co. has rented the Este building and will build an addition to be used as a repair shop.

**Eldorado Springs, Mo.;** C. M. Mason is building an addition to its garage.

**Green City, Mo.;** Green City Garage Co. is having the building enlarged.

**Green City, Mo.;** Payne & Fraizier is having the garage enlarged.

**Higginsville, Mo.;** Gladish Brothers is building an addition to its garage.

**Ingomar, Mont.;** Bert Vestal is building an addition to his garage.

**Ray, N. D.;** Walter A. Morin is enlarging its garage and repair shop.

**Dawson, S. D.;** F. I. Kaufman is erecting an addition to his garage 16x24 feet.

**Sioux Falls, S. D.;** W. H. Coon is building an addition to his Ford building on Phillips avenue, between 11th and 12th streets. The new addition will be 25 by 90 feet in dimensions and will be two stories high.

**Seattle, Wash.;** C. O. Radford Co. will have a story added to its present one-story garage.

# SECURITIES AND GENERAL MATERIALS MARKET

## Condition of Automobile Stocks and the Markets for General Material As Reported at Middle of Last Month and Corresponding Day This Month

**The tabulations following show the advance or decrease in the quoted stock exchange prices of the several active motor vehicle and kindred securities, and of the change in prices of the general material market, as it relates to the motor car industry.**

### *Automobile Securities Quotations*

| | June 14 | | July 12 | |
|---|---|---|---|---|
| | Bid | Asked | Bid | Asked |
| Ajax Rubber Co | 68½ | 71¾ | 68 | 71 |
| J. I. Case, T. M. Co., pfd | .. | 85 | 78 | 84 |
| Chalmers Motor Co., com | 10 | 15 | 9 | 13 |
| Chalmers Motor Car Co., pfd | .. | .. | .. | .. |
| Chandler Motor Car Co | 89 | 90 | 82 | 83 |
| Chevrolet Motor Co | 98 | 100 | 92 | 94 |
| Fisher Body Corp., com | 35 | 35½ | 34 | 37 |
| Fisher Body Corp., pfd | 87½ | 88½ | 87 | 89 |
| Fisk Rubber Co., com | 78 | 80 | 74 | 76 |
| Fisk Rubber Co., 1st pfd | 103 | 106 | 103 | 106 |
| Fisk Rubber Co., 2nd pfd | 92 | 95 | 92 | 95 |
| Firestone Tire & Rubber Co., com | 125 | 127 | 122 | 126 |
| Firestone Tire & Rubber Co., pfd | 106 | 108 | 104 | 106 |
| General Motors Co., com | 108½ | 109 | 113 | 114 |
| General Motors Co., pfd | 88 | 89 | 90 | 91 |
| B. F. Goodrich Co., com | 52⅝ | 52¾ | 47½ | 48 |
| B. F. Goodrich Co., pfd | 107½ | 108½ | 104 | 106½ |
| Goodyear Tire & Rubber Co., com | 193 | 197 | 202 | 205 |
| Goodyear Tire & Rubber Co., pfd | 106 | 108 | 105 | 107 |
| Grant Motor Car Corp | 3 | 5 | 3 | 6 |
| Hupp Motor Car Corp., com | 3 | 4 | 2½ | 3¼ |
| Hupp Motor Car Corp., pfd | 72 | 80 | 72 | 76 |
| International Motor Co., com | 5 | 10 | 5 | 10 |
| Internation Motor Co., 1st pfd | 30 | 50 | 20 | 50 |
| International Motor Co., 2nd pfd | 10 | 20 | 10 | 30 |
| Kelly-Springfield Tire Co., com | .. | .. | 46 | 50 |
| Kelly-Springfield Tire Co., 1st pfd | .. | .. | 87 | 95 |
| Lee Rubber and Tire Corp | 18 | 19 | 17 | 17½ |
| Maxwell Motor Co., Inc., com | 48¼ | 49 | 46¼ | 47 |
| Maxwell Motor Co., Inc., 1st pfd | 65 | 65¾ | 64 | 68 |
| Maxwell Motor Co., Inc., 2nd pfd | 31 | 32 | 29 | 30½ |
| Miller Rubber Co., com | 190 | 198 | 180 | 185 |
| Miller Rubber Co., pfd | 102 | 105 | 103 | 105 |
| Packard Motor Car Co., com | .. | 151 | 135 | 145 |
| Packard Motor Car Co., pfd | 95 | 98 | 95 | 98 |
| Paige-Detroit Motor Car Co | 29 | 31 | 26 | 28 |
| Peerless Truck and Motor Corp | 15 | 18 | 13 | 16 |
| Portage Rubber Co., com | 152 | 158 | 157 | 161 |
| Portage Rubber Co., pfd | .. | .. | .. | .. |
| Regal Motor Car Co., pfd | .. | 22 | .. | 22 |
| Reo Motor Car Co | 28 | 30 | 25 | 27 |
| Saxon Motor Car Corp | 41½ | 42 | 17¼ | 18½ |
| Springfield Body Corp., com | 52 | 57 | 5 | 15 |
| Springfield Body Corp. pfd | 110 | 117 | 15 | 30 |
| Standard Motor Construction Co | 12 | 13 | 11 | 12 |
| Stewart-Warner Speed. Corp | 74 | 76 | 63 | 64 |
| Studebaker Corp., com | 81¾ | 82 | 58¾ | 59 |
| Studebaker Corp., pfd | 101 | 105 | 93 | 94 |
| Swinehart Tire and Rubber Co | 65 | 70 | 60 | 65 |
| United Motors Corp | 27½ | 27¾ | 25 | 25¼ |
| U. S. Rubber Co., com | 61¼ | 62¾ | 59½ | 60½ |
| U. S. Rubber Co., pfd | 106 | 108 | 107 | 108 |
| White Motor Co | 46¼ | 47¼ | 47 | 47¼ |
| Willys-Overland Co., com | 28¾ | 29 | 31¾ | 32 |
| Willys-Overland Co., pfd | 92½ | 95 | 93½ | 94 |

### *General Market Prices*

| | June 18 | July 15 |
|---|---|---|
| Antimony | .... | 59 |
| Iron, foundry, S., ton | 40.00 | 49.50 |
| Iron, foundry, N., ton | 42.90 | 47.50 |
| Iron, Bessemer, ton | 47.95 | 50.00 |
| Steel, Bessemer, ton | 100.00 | 95.00 |
| Copper, elec., 100 lbs | 33.00 | 30.00 |
| Copper, lake, 100 lbs | 32.00 | 29.50 |
| Lead, 100 lbs | 11.75 | 11.00 |
| Tin, 100 lbs | 58¼ | 59½ |
| Petroleum, Kan., cr., bbl | 1.70 | 1.70 |
| Petroleum, Penn., cr., bbl | 3.10 | 3.10 |
| Linseed oil, raw | 1.24 | 1.10 |
| Lard oil, prime | 1.90 | 1.86 |
| Fish oil, Menhaden, br | 92 | 84 |
| Sulphuric acid, 60 | 1.50 | 1.50 |
| Cottonseed oil, bbl | 16.35 | 15.50 |
| Silk, raw, Italy | 7.50 | 7.40 |
| Silk raw, Japan | 6.40 | 6.95 |
| Rubber, fine, up-river, Para | 72 | 67½ |
| Tire, scrap | 7¼ | 7 |
| Steel, open hearth, ton | 100.00 | 95.00 |

**DOMESTIC CRUDE OIL PRICES.**

The prices of crude petroleum at the wells during the middle of the month of June were:

| | | | |
|---|---|---|---|
| **Pennsylvania dark** | **$3.10** | **Corsicana light** | **$1.70** |
| **Mercer black** | **2.18** | **Corsicana heavy** | **.85** |
| **Cabell** | **2.37** | **Electra** | **1.70** |
| **New Castle** | **2.10** | **Henrietta** | **1.70** |
| **Corning** | **46** | **Caddo, La., 38°** | **1.90** |
| **Wooster** | **2.18** | **Caddo, La., heavy** | **1.00** |
| **North Lima** | **1.88** | **Healdton** | **.90** |
| **South Lima** | **1.88** | **Moran** | **1.70** |
| **Indiana** | **1.78** | **Strawn** | **1.70** |
| **Princeton** | **192** | **Thrall** | **1.70** |
| **Somerset 32°** | **2.20** | **De Soto** | **1.6** |
| **Ragland** | **1.00** | **Crichton** | **1.40** |
| **Illinois above 30°** | **1.92** | **Canada** | **2.28** |
| **Kan. & Okla** | **1.70** | **Humble** | **1.00** |
| **Plymouth** | **1.88** | **Cal., 37 grav** | **132** |

**Naphtha.**

| | 10-gal. drums | |
|---|---|---|
| | Under 100 cases | 100 cases and over |
| Benzine, 59-62° | 35¼ | 34¾ |
| Stove | 35½ | 35 |
| Auto, 68-72° | 41 | 40½ |
| Naphtha, 73-76° | 45 | 44½ |

| | In cans and cases | | |
|---|---|---|---|
| | Under 100 | 100-199 | 200-299 |
| Benzine, 59-62° | 30½ | 30¼ | 30 |
| 75 a 76° | 40¼ | 40 | 39¾ |
| Stove | 30¾ | 30½ | 30¼ |
| Auto, 68-72° | 36¼ | 36 | 35¾ |

**NEW YORK CITY PRICES.**

New York City prices for petroleum and its products were:

**Petroleum.**

| | | | |
|---|---|---|---|
| Crude, barrels, a gallon | 15a18 | Fuel, 31° | 10½ |
| Refined barrels | 13 | Fuel, 34° | 11 |
| Tank wagons delivery | 9 | | |

**Naphtha.**

| | | | |
|---|---|---|---|
| Garages | 24 | V. M. & P. deod., in steel | 23 |
| Consumers | 26 | V. M. & P. deod., in wood | 26 |

**Gasoline.**

| | | | |
|---|---|---|---|
| Gas machine, steel | 41 | 68-72° steel | 32 |
| 72-76° | 38 | 68-72° wood | 28 |
| 72-76° wood | 38 | | |

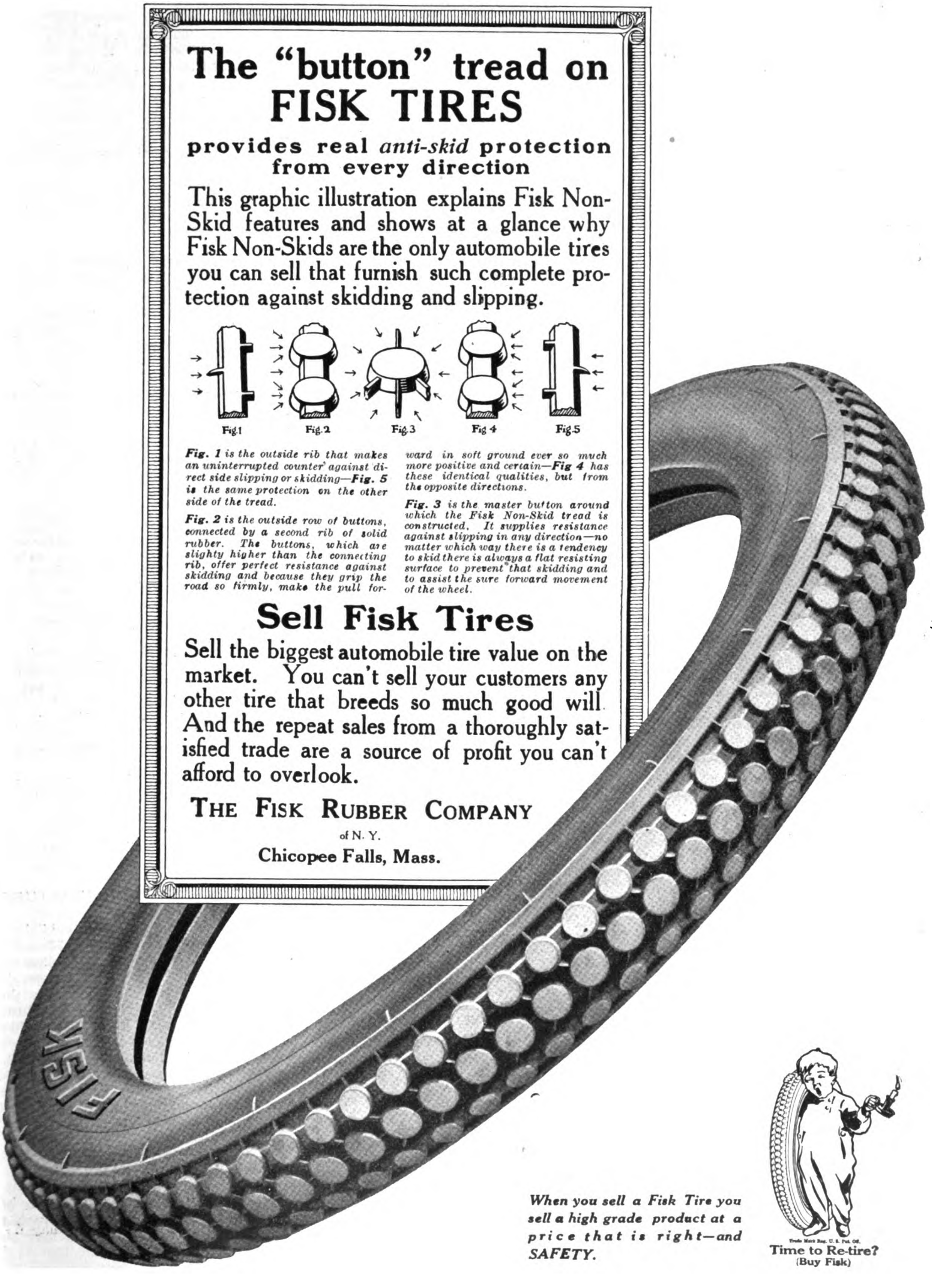
### *Foreign Trade Opportunities*

(Address Bureau of Foreign and Domestic Commerce, Washington, D. C., Giving Number, Which Will Forward Correspondence, Unless Otherwise Stated.)

24,728—An exclusive agency is desired by a company in Norway for the sale of automobiles, trucks, motorcycles, motor boats and marine motors. Quotations should be made f. o. b. New York. Cash will be paid. Correspondence may be in English. Reference.

24,845—An import agent in Russia desires to be placed in communication with American manufacturers or exporters of pneumatic tires, ball bearings, tachometers, hubs, air pumps and lamps, chains for automobile trucks and motor spark plugs for cars and airplanes.

24,898—A request has been received through the American consul in Brazil for the purchase and also for the agency for pipes of cast iron, tile and cement, pumps, tools, automobiles, railway material, oils, lubricants, paints, varnishes, etc. Correspondence may be in English. Quotations should be made f. o. b. New York. References.



# The "button" tread on FISK TIRES

## provides real *anti-skid* protection from every direction

This graphic illustration explains Fisk Non-Skid features and shows at a glance why Fisk Non-Skids are the only automobile tires you can sell that furnish such complete protection against skidding and slipping.

***Fig. 1** is the outside rib that makes an uninterrupted counter against direct side slipping or skidding—**Fig. 5** is the same protection on the other side of the tread.*

***Fig. 2** is the outside row of buttons, connected by a second rib of solid rubber. The buttons, which are slighty higher than the connecting rib, offer perfect resistance against skidding and because they grip the road so firmly, make the pull forward in soft ground ever so much more positive and certain—**Fig 4** has these identical qualities, but from the opposite directions.*

***Fig. 3** is the master button around which the Fisk Non-Skid tread is constructed. It supplies resistance against slipping in any direction—no matter which way there is a tendency to skid there is always a flat resisting surface to prevent that skidding and to assist the sure forward movement of the wheel.*

## Sell Fisk Tires

Sell the biggest automobile tire value on the market. You can't sell your customers any other tire that breeds so much good will. And the repeat sales from a thoroughly satisfied trade are a source of profit you can't afford to overlook.

**THE FISK RUBBER COMPANY**
of N. Y.
Chicopee Falls, Mass.

*When you sell a Fisk Tire you sell a high grade product at a price that is right—and SAFETY.*

Time to Re-tire?
(Buy Fisk)

# CLEAN GARAGE—LONGER CAR LIFE

## Service Man Gives Suggestions to Owners Who Care For Their Own Automobiles

"No prospective owner hesitates to ask about the proper way to take care of his car," says the superintendent of Paige service. "But he frequently overlooks the matter of providing himself with the facilities to make such care easy. If a man looks after his car himself he should see to it that his home garage is a place of order and tidiness. A clean, well ordered, well equipped garage means longer life for the car.

"Owners frequently allow their cars to get into bad condition because the garage has been allowed to run down to such an extent that, to find any given article, a dozen and one other things have to be turned over or upside down, ending very often in a vain search and a ruffled temper.

"There should be a few shelves around the garage on which to place oil and grease tins, boxes for dusters, cotton waste, and the many other accessories which accumulate so quickly. All boxes should have a label outside, giving details of their contents.

"Several pieces of wood across the garage near the roof, or across one corner, will do to store away old outer covers and tubes until there are a sufficient number to send away.

"A work bench on which a vice can be fixed is invaluable if there is room for it.

"One of the most useful things in a garage is a tool rack. This is easily made and consists of a fairly thick board large enough to hold all the tools which are kept in the garage for general repairs as apart from those that are carried in the car.

"First of all, however, place the tools on a large piece of paper and arrange them so that they take up as little room as possible, although sufficient room should be left between each for you to be able to pick up any one without disturbing the one next to it. Put them into groups, keeping tools of the same kind together, ranging from the largest to the smallest.

"The best positions having been found, you will now know what size your board will be, but it is advisable to get one larger than you immediately require, so that new tools may be added as they are bought. The board procured, proceed to drive in nails, screws, staples or hooks on which to hang the tools.

"Now paint an outline of each implement on the board so that when a number of tools are removed at the same time you will be able to see at a glance exactly where they go when you wish to replace them.

"Another useful article is a chest of drawers in which to keep such things as washers, split pins and nuts. A convenient place for it is on a shelf, not too high up. Any carpenter would make one for a small sum, but during the long evenings it is quite a pleasant occupation to make it yourself, particularly as it does not require many tools or an expert carpenter to carry out the job in a satisfactory manner.

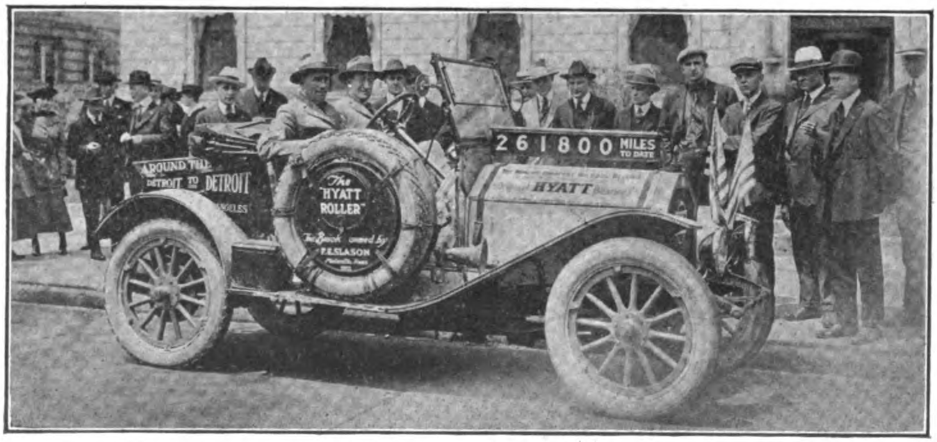
"A handle placed on the top of the chest will enable it to be carried to wherever you may be working, in the same manner as the tool rack. It is very convenient to be able to do this, as it saves much walking about."

### "HYATT ROLLER" HOLDS RECORD FOR BEARING MILEAGE.

The "Hyatt Roller" and old Buick car, which has traveled over 263,000 miles on its original bearings, is now rounding out a tour of the United States, visiting all the principal cities as a practical demonstration of the wearing qualities of the Hyatt bearings, which have already outlived in usage the normal life of several cars.

The Buick car, a model 16, was bought in 1909 by a man named F. E. Slason of Plainville, Kan. It was equipped with five Hyatt bearings at the points of hardest usage. He drove the car for seven years in all kinds of service; as trouble car and for numerous other purposes. In all he covered 261,800 miles, which record was verified last year in the Hyatt Mileage Contest, the car being awarded first prize.

With the same bearing equipment that was in it originally the car was started out on its long journey about the country June 4 and the Hyatt officials have no fear but that it will pile on several more thousands of miles to its record without suffering any material wear to the Hyatt rollers.



**Stock Car Equipped with Hyatt Bearings Making a Circuit of the United States, After Being Driven a Distance of More Than 10 Times Around the Earth.**

### A-C PLUGS MAKE RECORD EARLY IN RACING SEASON.

Although the 1917 racing season is only about half over, the cars equipped with A-C spark plugs, made by the Champion Ignition Co., Flint, Mich., have made enviable records in many contests.

At Uniontown, Pa., in the opening race of the season, Billy Taylor, driving an A-C equipped Stutz, won the Universal Trophy Race, and with it the $10,000 Carl Laomale cup. Taylor's time for the 112½ miles was 89.9 miles per hour. T. P. Fetterman, driving an A-C equipped Peerless, won the dealer's race at a speed of 82.5 miles per hour.

On Memorial Day at the Cincinnati race, Vail, in an A-C equipped Hudson Super-Six, won second; Rodgers, in an A-C equipped Maxwell, third in the big race, and Harry Rutbert, driving an A-C equipped Hudson Super-Six, won the free-for-all dealers' race.

Percy Ford, Jr., in an A-C equipped Haynes won the 100-mile non-professional race at 89 miles per hour at Chicago on July 26, and in the same race Ralph Mulford, in an A-C equipped Hudson, and Cliff Durant, in an A-C equipped Oldfield-Delage, won second and third respectively.

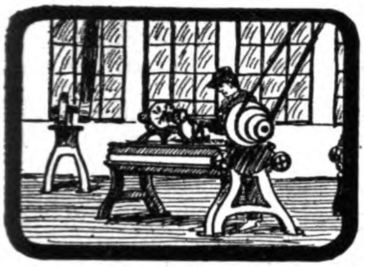
George M. Price of Seattle, in an A-C equipped Paige roadster, recently broke the 167-mile record between Seattle and Vancouver by covering the distance in three hours and 42 minutes actual running time.

### COURSE IN RUBBER MANUFACTURE.

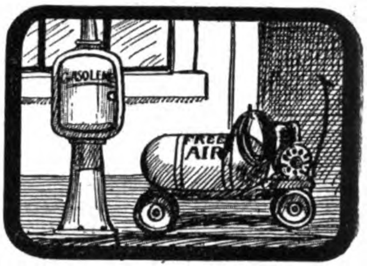
Gardner, Moffat Co., Inc., publishers of the Rubber Age, 120 West 32nd St., New York, announces in its publication a comprehensive technical course in rubber manufacture. The course is the same as that being given at the Municipal University of Akron, O., the world's leading rubber city, and will be written by Prof. H. E. Simmons, B. S., M. S., head of the department of chemistry of the university. The first section of the course appears in the July 10 issue of Rubber Age and will be continued for 27 consecutive issues.

### ILLINOIS WILL RAISE FEE.

Automobile license fees in the State of Illinois in 1918 and 1919 will be increased 50 per cent., so that $60,000,000 may be issued in hard road bonds.



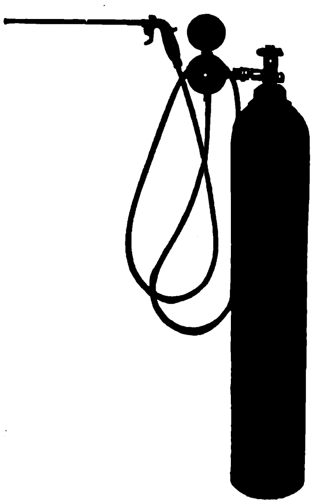
# GARAGE EQUIPMENT



### CARBON REMOVING OUTFIT.

The modern method of removing carbon from engine cylinders by the oxydization process is acknowledged to be both rapid and efficient, but to properly burn out the carbon good apparatus is necessary. The style A carbon removing outfit illustrated consists of a flexible copper nozzle torch, which is fitted with a specially designed, quick acting trigger valve; a length of woven linen covered gas hose, with couplings at each end; a diaphragm type with hard rubber seat regulator, and a double connection which is made to fit either ¾ inch straight pipe thread or standard Linde tank thread. Special attention is called to the improved design of the torch handle, which makes the use of it convenient since the flow of gas is easily controlled by the action of the trigger.

**Manufactured by the G. H. Dyer Co., Cambridge, Mass. Write for catalogue and price.**

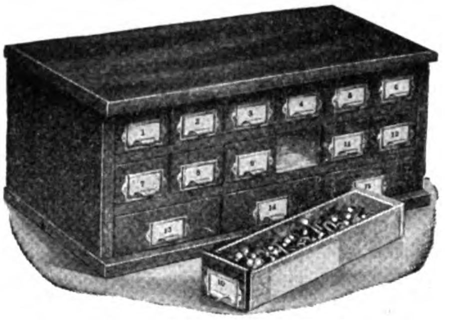


Dyer Carbon Removing Outfit.

### HANDY SERVICE CABINET.

The Handy Service Cabinet, illustrated herewith, is particularly suited to the requirements of the small private garage, repair shop and supply store, for taking care of screws, bolts, nuts, small repair parts or spark plugs. It is substantial and well finished, the front and sides are varnished oak. There are 12 small drawers, three by three by 12 inches, and three larger drawers six by three by 12 inches. The sides and bottom of the drawers are made of galvanized steel, dust proof and guaranteed not to stick. Each drawer is fitted with a combination pull and card holder, and a full set of blank cards are furnished. On the side of each drawer is a square label for stock record.

**Manufactured by Stevens & Co., 375 Broadway, New York City. Price to dealers, $5.**



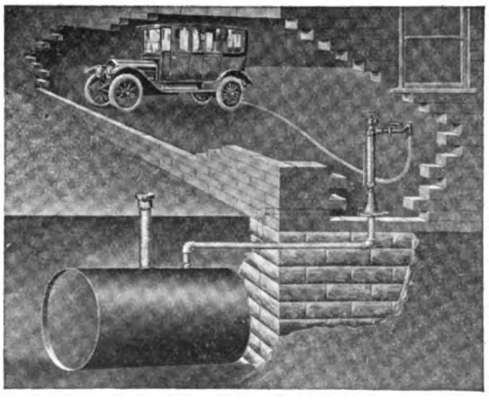
Handy Service Cabinet.

### GASOLINE STORAGE OUTFIT.

Few garage owners realize that the storing of gasoline plays an important part in the performance of the car. If left exposed to air circulation a portion of the gasoline vaporizes, leaving the less volatile part. When this gasoline is used in the engine, starting is made difficult. Another argument for proper gasoline storage is the elimination of the fire hazard from this source.

The Scaife Gasoline Storage Outfits are a practical system for storing gasoline. The tank may be placed outside the garage and below the surface of the ground, the filler and vent also outside, the pump connection through the side of the garage and the pump at any point inside the garage. The tanks are made from heavy galvanized iron, painted on the outside with rust proof paint. The heads and seams are welded to the shell, making the tank practically leak proof. Before leaving the factory each tank is subjected to a compressed air test. The filler pipe is fitted with cap and lock and designed to act both as strainer and vent. The pump faucet, cylinder and inside parts are made of brass, handle and foot plate of galvanized iron. Each pump is fitted with an anti-drip faucet, shut off and padlock.

**Manufactured by Wm. B. Scaife & Sons Co., First National Bank Bldg., Pittsburg, Pa. Write for catalogue and prices.**

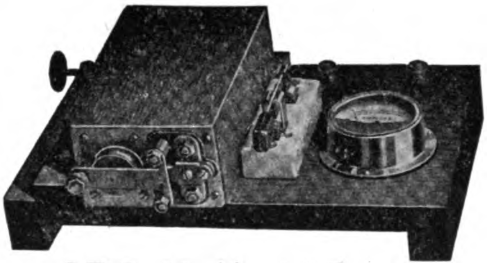


Scaife Gasoline Storage Outfit.

### B-W FORD IGNITION COIL TESTER.

To give satisfaction the ignition system of a car must be in perfect working order. The Ford car ignition system and its proper performance is dependent upon four secondary coils. The adjustment of these coils is a delicate matter and "hit or miss" methods cannot be used if satisfactory functioning is desired. The B-W coil tester, illustrated herewith, is a device by which the coils may be tested and adjusted. It consists of a wood base upon which is mounted a low reading ammeter, receptacle contact springs in which the coil may be placed, two binding posts for connection with a six-volt storage battery, an adjustable spark gap and primary switch. The coil to be tested is slipped into place, a battery connected, the switch closed and the ammeter reading noted. If the coil is in good condition the ammeter reading should be approximately 1½ amperes, with a continuous flow of sparks across a ¼ inch spark gap. The vibrator points are adjusted or spring bent until such a result is had.

**Manufactured by Ballman-Whitten Mfg. Co., 2867 Gravois Ave., St. Louis, Mo. Price, $5.10.**



G-W Ford Ignition Coil Tester.

### SHOP RECORD AND REPAIR TAG.

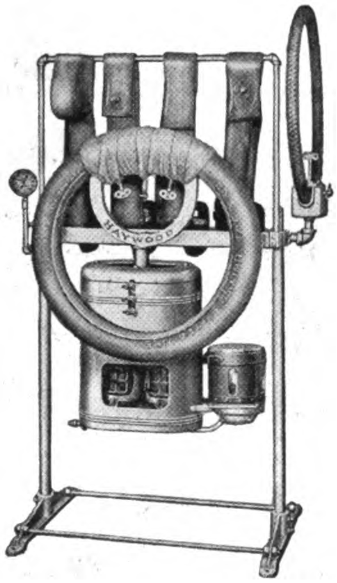
A handy Shop Record and Repair Tag is now being put on the market, which should be of value to the small repair man or garage owner. This tag, on one side has blank spaces for the car owner's name, date received, trouble, clerk's name and other details. Attached to the tag is a check receipt, bearing a serial number similar to one stamped on the tag itself. On the reverse side of the tag is a space for time and material used on the job. These tags printed on light cardboard, with reinforced string hole and string, are numbered serially and printed in large quantities.

**Manufactured by Stevens & Co., 375 Broadway, New York City. Price, $5 per thousand.**

## HAYWOOD'S D-B VULCANIZER.

A branch of the trade that is paying big dividends to the garage man is tire vulcanizing. The new Haywood model D-B Steam Vulcanizer is designed to take care of practically any shoe, tube or bicycle tire repair. The boiler, which is made of extra heavy iron and tested to 200 pounds pressure, contains seven quarts of water. This water is heated by a double burner oil stove, and when once steam pressure is brought to the proper height, it may be maintained constant with little or no attention. The system is fitted with a pressure gauge, a safety valve and curing plates. The inside curing mold can be used for making repairs on all sizes and types of tires up to and including those of 4½ inches in cross sections.

**Manufactured by Haywood Tire and Equipment Co., 807 No. Capitol Ave., Indianapolis, Ind. Price, $45 complete.**



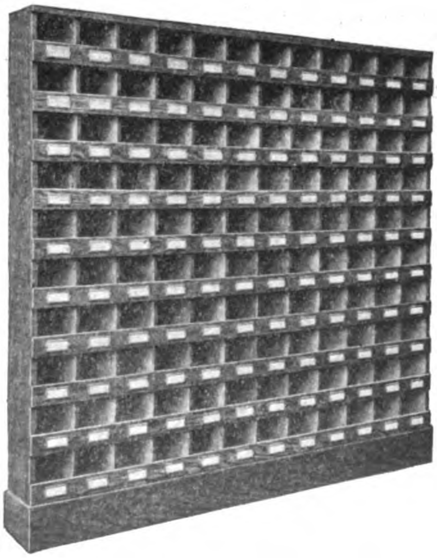
Haywood's D-B Vulcanizer.

## ACCESSORY AND PARTS STOCK BIN.

The Accessory and Parts Stock Bin illustrated herewith supplies a convenient and economical equipment for handling an extensive amount of stock and parts such as valves, springs, bolts, piston rings, bearings, cones, grease cups, etc. It is attractive in appearance and makes a more practical and flexible equipment than the average built in set of shelves.

The bin contains 120 compartments, 6x8x10 inches, a size large enough to take care of practically all of the ordinary accessories and small repair parts. The front partition and ends of the bin are genuine oak, with a light grained finish. The back is of sheet steel. Each compartment bears a metal card index holder.

**Manufactured by Hobart Bros. Co., Troy, O. Price, $25.50.**



Accessory and Parts Stock Bin.

## PORTABLE FLOOR CRANE.

There are perhaps but few pieces of garage equipment of more utility than the floor crane. Its many uses and the saving of time accomplished by its employment make it almost invaluable where there is much automobile or machine work done. The crane illustrated is designed to combine strength with lightness. The superstructure is made of steel, the base of cast iron. Standard cranes are made in a number of sizes and have capacities ranging from one to two tons with lifts from 6½ feet to 7½ feet according to size. The length of overhang, which is so important in a crane for garage uses, is 30 inches in the one ton size, 34 inches in the 1½ ton and 36 inches in the two ton. The gear ratio of leverage on the hoist drum is very high and gears are wide faced and covered with a proper guard for safety. The single front steering wheel is fitted with a device by which the crane may be made immovable by locking with the foot.

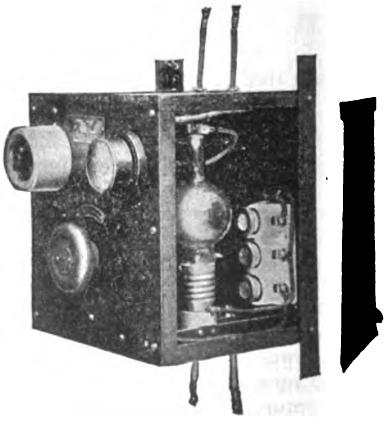
**Manufactured by the United Engine and Manufacturing Co., Hanover, Penn. Prices upon request.**

Portable Floor Crane.

## NEW TUNGAR RECTIFIER.

There is a great demand all over the country for a device that will transform 115-volt, 60-cycle alternating current, to direct current, suitable for recharging automobile storage batteries. To meet this demand the new Tungar rectifier has been designed. This device is simple to operate, requiring but the connection of the top lead wires to alternating current supply, and the connecting of the lower wires to the batteries which are to be charged. The batteries are to be connected in series and the voltage may be regulated according to the number of batteries by the 15 point compensator. The current is instantly adjustable in steps up to six amperes. Should the alternating current fail the batteries cannot discharge through the rectifier, but will start recharging when the current comes on again. The manufacturers claim that the cost for a 13-hour charge of a three-cell battery, when charged in groups of 10, is about nine cents; and about 12 cents when charged in groups of five.

**Manufactured by General Electric Co., Schenectady, N. Y. Write for prices.**



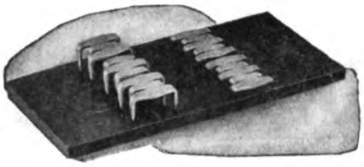
New Tungar Rectifier.

## BRISTOL'S STEEL BELT LACING.

An important factor in power transmission is belt condition. Belts that are not flexible or not properly joined at the ends absorb much power, thereby increasing the cost of overhead. The Bristol belt fasteners are made in many sizes and designed for practically any weight or size of belt. They are made from especially tested cold rolled steel by a patented cutting method which eliminates waste, thus bringing down the cost.

The application to the belt is easy, and when applied the joint resembles, in general lacing design, that of a raw hide laced belt.

**Manufactured by the Bristol Co., Waterbury, Conn. Write for catalogue and prices.**



Bristol's Steel Belt Lacing.

ACCESSORIES
AND
EQUIPMENT

## THE LENNON LIGHT.

The United States Court of Appeals have just affirmed the patent rights to the Lennon light, which is a flexible brass reflector, heavily plated, by which the beams of light are thrown on to the road at the approved height from the ground, and prevented from causing the headlight glare which causes so many accidents and which is prohibited by statute in many states. This device is made in two sizes and will fit practically any headlight. It is light in weight and simple in construction, having no springs or extra parts to become broken.

**Manufactured by J. H. Faw, Inc., 41 Warren St., New York City. Retail price, $1 per pair.**

## MARTIN DOOR POCKET.

Among accessories designed for Ford and Chevrolet cars that are useful as well as ornamental, is the Martin door pocket. This pocket is made of high grade leather cloth and is guaranteed not to crack or peel. Such a pocket offers space for carrying route books, pamphlets or small tools, and are very convenient, utilizing unused space to the best advantage.

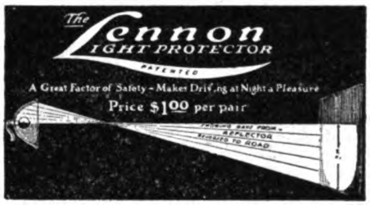
**Manufactured by Martin Manufacturing Co., Lancaster, O. Price, 75 cents.**

## WONDER-MIST.

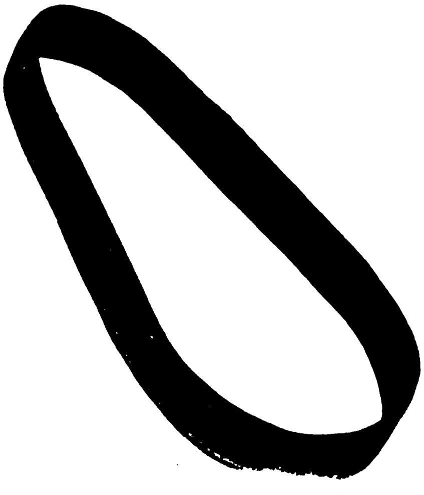
The reselling value of a car depends to a great extent upon the condition and appearance of the body. Wonder-Mist is a liquid spray polish which is said to preserve body finish as well as clean it. It contains certain life giving properties which keep the finish of the automobile elastic and flexible, keeping the paint from checking or cracking due to expansion and contraction of the surface. It may be sprayed on right over dirt, mud, dust or grease. It penetrates and loosens all accumulations, at the same time acting as a lubricant between dirt and finish. It is then a simple matter to wipe the dirt off with a piece of cheese cloth without damaging the finish. Then a little rubbing with a clean piece of soft cloth polishes the surface. It is stated that six cents worth of this finish is sufficient to clean the average touring car.

**Manufactured by Wonder-Mist Co., 14 Federal St., Boston, Mass. Prices upon request.**

Dyer Lightweight Piston.


The Lennon Light Protector
Patented
A Great Factor of Safety - Makes Driving at Night a Pleasure
Price $1.00 per pair
Reflector

Action of Lennon Light Protector.



Cork Insert Ford Fan Belt.

Martin Robe Rail Bag.

## CORK INSERT FORD FAN BELT.

The Advance Automobile Accessories Corp. announces a new Ford fan belt. This belt is based upon the same idea as underlies the well known cork insert transmission linings for Ford cars. In this belt circular pieces of cork are inserted into a high grade tanned and stretched strip of specially waterproofed oak leather. The cork inserts are backed up by a heavy fabric to prevent their becoming loose or slipping out. This construction is said to eliminate the slipping, which might cut down the efficiency of the belt. Exposed, as it is, to oil, water and grease, the Ford fan belt has a tendency to wear smooth and thereby increase the slippage, cutting down on the fan efficiency. Since cork is not effected by water, oil, grease or dirt, retaining its gripping qualities, and wearing but slowly, the manufacturers of the cork insert belt claim that such a belt results in increased efficiency of radiation.

**Manufactured by Advance Automobile Accessories Corp., Dept. E3-1, 56 East Randolph St., Chicago, Ill. Price for 1917 Ford car model belt, $1. For other models, 85 cents.**

## DYER LIGHTWEIGHT PISTON.

Designed to fill a want for a light yet strong piston, the Dyer light weight piston for Ford cars will be appreciated by the owner who is remodeling his car.

The piston is made of a specially tough metal, carefully machined and has special oiling features. These pistons are made in standard and oversizes and sold complete with wristpin and rings. Each piston weighs but two pounds, which is practically half that of the standard Ford piston. In addition to the extreme light weight is the feature of uniform balance. Each piston is limited to a variation of two ounces.

**Manufactured by the G. H. Dyer Co., Cambridge, Mass. Write for prices and catalogue.**

## LIBERTY FLAG HOLDER.

The new Liberty flag holder is a cleverly made little device for making possible the attachment of five flags to the radiator cap of an automobile. This device is so designed that the flags are held in front of the filler cap in a fan shaped arrangement. The holder is heavily nickeled and carries steel flag staffs, which are firmly secured in the holder. A special effort has been made to prevent the fraying of the flags, which are made of special silk and heavily stitched at the edges.

**Manufactured by the Stanley Manufacturing Co., Dayton, O. Send for price.**

## DIXON'S NON-LEAK GREASE.

The motorist is frequently faced by the problem of grease exuding from the rear axle to the brake bands and wheels of his car. This excess grease not only detracts from the appearance, but also produces a danger element, in that the lubrication of the brake bands prevents their proper functioning. The manufacturers claim that Dixon's No. 680 non-leak grease solves this difficulty. It is composed of selected flake graphite, thoroughly mixed with a special adhesive lubricant.

**Manufactured by Joseph Dixon Crucible Co., Jersey City, N. J. Write for booklet and dealer's proposition.**

## STOCKBRIDGE SEMI-TRAILER.

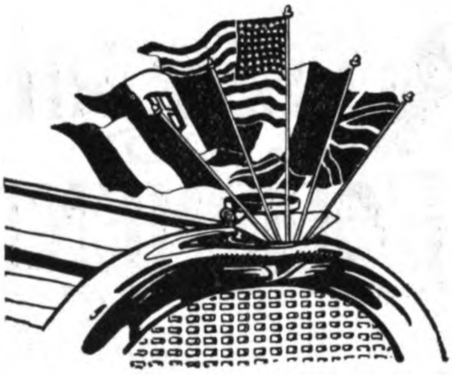
For the business man who does an expressing or delivery business, and owns a Ford car, the Stockbridge semi-trailer equipment should be a practical investment. This trailer is made in two sizes, of 2000 and 3000 pounds capacities. It is mounted on the rear of the Ford, as shown in the illustration, attached to a so-called rocking fifth wheel, which is easily removable. The wheels are 46 inches in diameter, with artillery type hubs, large spokes and equipped with solid rubber flat top tires. The bodies are of the express type with side flareboards and stakes if desired.

**Manufactured by Stockbridge Body Co., 130-6 Union St., Springfield, Mass. Price, $195 for one-ton size; $225 for 1½-ton size.**

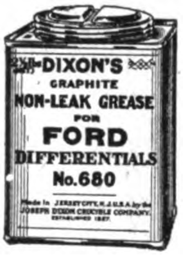
## G-WIZ STEAM VULCANIZER.

A small portable steam vulcanizer is being introduced which is designed to vulcanize either tubes or shoes. It is a metal body partially filled with water at the factory and then sealed, in such a manner that it needs never be refilled. A small fire box, packed with asbestos, is filled with gasoline and when lighted furnishes enough heat to turn the water to steam, so vulcanizing the tire. In the G-Wiz, no flame is exposed, nor is there practically any smoke, the fire being controlled by draft holes. The complete outfit comes packed in a neat box with raw rubber, cement, directions and everything ready to start work, and weighs but three pounds.

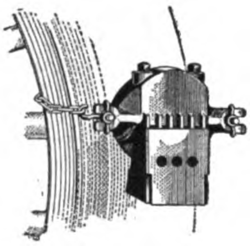
**Manufactured by the National Motor Supply Co., Cleveland, O. Price complete, $1.50.**



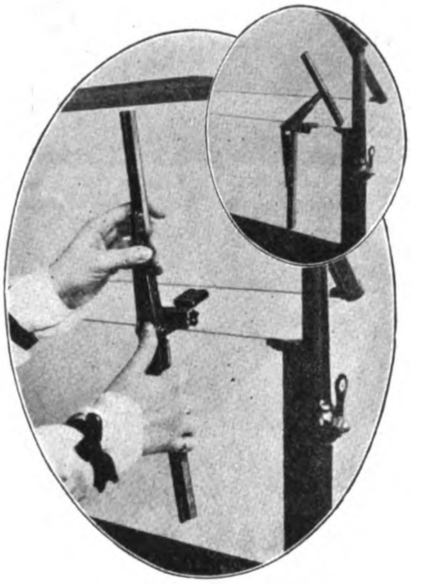
Liberty Flag Holder.



Dixon's Non-Leak Grease.



G-Wiz Steam Vulcanizer Applied.



Universal Rain Rubber.

## THE CATHEDRAL BELL.

A warning signal that is somewhat different from the usual signals is termed the Cathedral Bell. It is said that the tone is distinctive, unmistakable, yet musical; warning, yet does not offend. At the same time the signal is sounded a brilliant red light is flashed through the lens surmounting the bell. By this means the warning is conveyed to both the eye and the ear.

**Manufactured by the Cathedral Bell Mfg. Co., Baltimore, Md. Write for details and prices.**

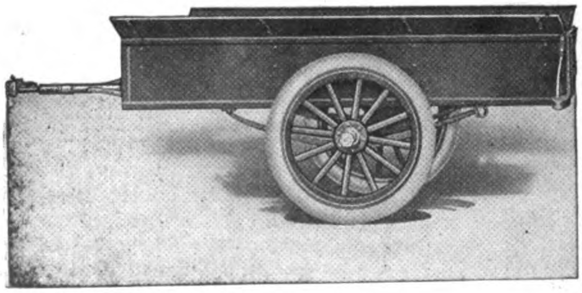
## ACCESSORY DISPLAY CASE.

The development of the accessory business in the past few years has brought about the manufacture of a show case designed especially for the attractive display of automobile accessories. The accessory display case not only makes it easy for the motorist to select what he desires, but, in addition, the attractive arrangement and display of other accessories creates extra sales. This case is built in standard lengths from five to 10 feet, with from 35 to 70 drawers, depending upon the length of the case. There are five tiers of drawers, which vary in size, and each drawer is fitted with a bronze pull and card holder, so that the description and price of each article can be read easily.

**Manufactured by the Detroit Show Case Co., 459 Fort St., W. Detroit, Mich. Send for prices.**

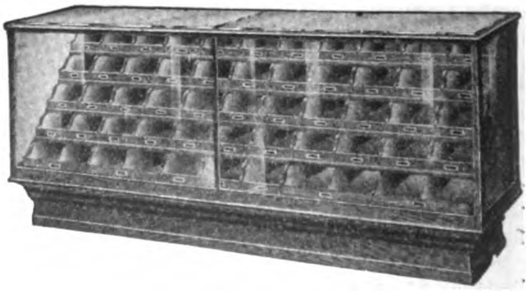
## UNIVERSAL RAIN RUBBER.

A protection for the motorist and the traveling public comes in the form of a cleaner for the windshield and is known as the Universal Rain Rubber. This device can be instantly attached and easily moved, cleaning both the top and bottom glass the full width across. Multiple rubber faces of gum rubber make the cleaner flexible with two cleaning surfaces on each arm. The rivets are topped with celluloid heads, so that they will not scratch the glass. One desirable feature is that the device can be removed



Stockbridge Semi-Trailer.

Cathedral Bell Warning Signal.



Detroit Accessory Display Case.

by simply opening the glass and lifting the rain rubber off. It is made in five different models, designed to cover any type of two-piece windshield.

**Manufactured by Tri-Continental Corp., Buffalo, N. Y. Price, $1.50.**

## ROBE RAIL BAG.

For carrying small articles there is nothing more convenient than a robe rail bag. The bag illustrated is made to hang from the robe rail by concealed hangers. It is equipped, besides the very large compartment, with two large and two small pockets. All are fastened by glove snap fasteners. It is made of the best upholstery fabric and measures 24 by 18 inches.

**Manufactured by the Martin Mfg. Co., Lancaster, O. Price, $3.**

## BURD PISTON RING DIRECTORY.

A book entitled, "Burd Piston Ring Directory," which has just been published by the manufacturers of Burd piston rings, contains the listing, both by sizes and by alphabetical order, of piston ring requirements for practically every automobile, truck and tractor manufactured in this country during the past 10 years. In addition to this valuable information it contains a like list of the requirements of aeronautical, marine, stationary and other types of internal combustion engines. This book contains 264 pages and may be obtained by any member of the trade by writing this firm, using his stationary or enclosing business card.

**The Burd High Compression Ring Co., Rockford, Ill.**

## FITALL ADJUSTABLE TOILET KIT.

For the convenience of the traveling motorist to store such toilet articles as he or she may desire, the Fitall adjustable toilet kit makes a practical accessory. This toilet kit is light, compact and made of a water proofed and flexible leather. The strap holders are so arranged as to be adjustable to different toilet articles. Fitall kits are made in many different styles, either empty to receive the fittings which are already in hand, or for new fittings, as may be selected.

**Manufactured by Eiseman, Kaiser & Co., 23-31 S. Franklin St., Chicago, Ill. Write for illustrated catalogue and prices.**

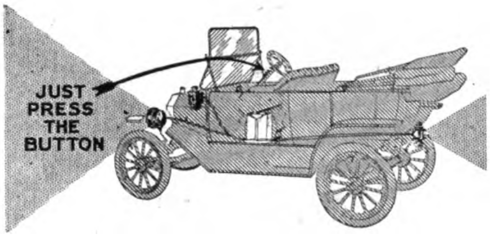
## LAWCO SILENCER.

A muffler which is said to eliminate back pressure and loss of power is now being put on the market under the name of Lawco Silencer. This silencer is designed for use upon any of the cars upon the market and comes complete with hangers and fittings ready for application.

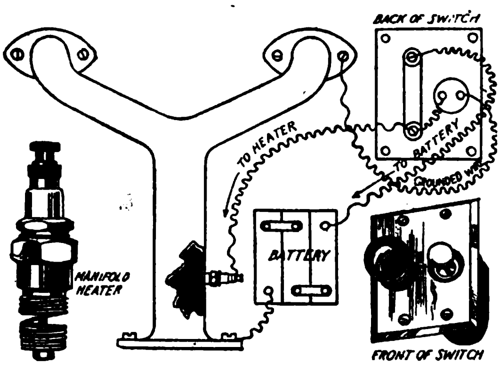
**Manufactured by the F. H. Lawson Co., Cincinnati, O. Price for Ford attachment, $2.50. Write for other prices.**

Magazine Screw Driver.

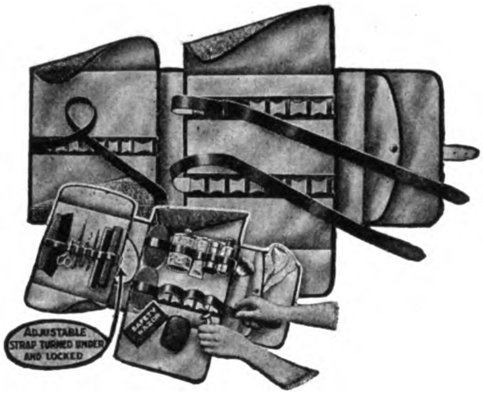
Lawco Silencer.



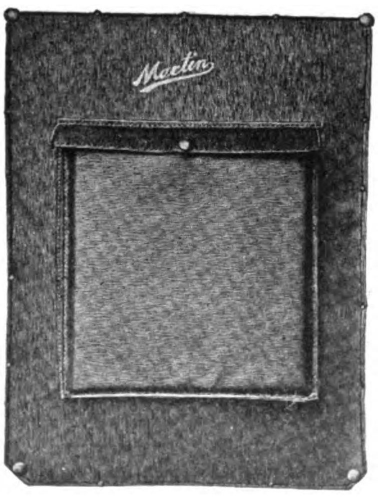
Warnerlite System.



The Lepper Manifold Heater.



Fitall Adjustable Toilet Kit.



Martin Door Pocket.

## MAGAZINE SCREW DRIVER.

A handy little screw driver is shown in the illustration, which should be of general use to practically any automobilist. It is called the Starrett Patent Magazine Screw Driver. It is fitted with four blades of different widths from 3/32 to ⅜ inch, any of which may be taken from the telescope handle and inserted in the end, where it is automatically locked and firmly held for use. The blades are carried in the handle, where, by a spring pressure, they are held from rattling when carried in the pocket, or from being lost when the cap is off. While the cap may be readily pulled off or put on, it is rigidly held from turning and frictionally held from coming off, with no screws to bind or bother.

**Manufactured by the L. S. Starrett Co., Athol, Mass. Price, $1. Extra blades, 10 cents.**

## THE LEPPER MANIFOLD HEATER.

"The problem of low test gasoline and kerosene oils in an internal combustion engine can be solved by the proper application of heat to the carburetor or intake" is the thought which was brought out in a paper recently read before the S. A. E. The Lepper Manifold Heater is a device which is designed to be inserted in the intake manifold of a gasoline engine. This device looks similar to a spark plug and is connected through a switch with a storage battery. When it is desired to start the car the switch is turned on and the current passes through the heater, causing the heater coil to give off heat, thereby vaporizing the gasoline as it is drawn into the engine.

**Manufactured by the Lepper Mfg. Co., 101 North Federal Ave., Mason City, Iowa. Price complete with cord and switch, $7.50.**

## WARNERLITE SYSTEM.

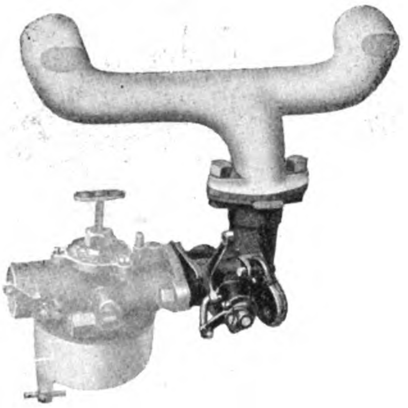
"A lighting system that solves the Ford car lighting situation" are the words used by the makers in describing their products. This system consists of two parts, each of which, though separate from the other, is complete within itself. The first, called the headlight outfit, consists of a regulator, by which the current from the Ford magneto is kept at a constant voltage and evenly distributed to the lights; two nitrogen lamps; a dimmer switch for attaching to the steering post and all necessary wire and material. With this system the headlights are wired in multiple so that should one lamp burn out or go wrong the other lamp would continue to burn. It is said that a good, strong, steady light is obtained at all speeds with this system. The second, or side and tail light outfit, consists of a 50 ampere-hour storage battery, which is guaranteed for two years; a Fordrectifier, by which the battery is kept charged from the Ford magneto; three special bulbs for side and tail lamps; one two-point switch to be located on steering post and all necessary wire and material. Either of the systems may be purchased independently or both together, forming a complete lighting outfit.

**Manufactured by the Warner Lamp Co., Davenport, Iowa. Price for first system, $7.50; for second, $17.50; for complete Warnerlite system, $24.**

## MONARCH GOVERNOR.

Whether the depreciation of a delivery car is five or 50 per cent. depends largely upon how it is driven. The flexibility and ease of operation of the Ford car make the temptation to extra speed unusually great. For this reason every merchant using in the business one or more Ford cars is vitally concerned with their care. A business vehicle, truck or delivery car should not be speeded as fast as a pleasure vehicle. If it is the strain is too great and its life is lessened. To prevent the misuse of the Ford car and control the car speed the Monarch Governor has been designed. The Monarch Governor is a self-contained unit, having no connection with any moving part of the engine or the car. Its sole function is to control the engine so that the engine speed will be nearly constant, regardless of the work it may be doing. This speed as expressed in miles per hour is set at any maximum desired by the owner; then the governor automatically takes care of the fluctuations caused by increased or decreased load, or by bad roads. The entire control, both manual and automatic, is through the governor throttle. The driver may control the car to any speed below the maximum speed, but cannot drive above this maximum.

**Manufactured by Monarch Governor Co., 524 Bethune Ave., West, Detroit, Mich. Price, $25 complete with manifold.**



The Monarch Governor Applied.

## AUTOMOBILE BUCKET.

No automobilist can afford to be without some means of filling his radiator should it become dry. The illustration shows a handy bucket that will hold about one gallon of water, yet can be folded flat when empty and carried in the pocket. It is made of a special dull finished water proof duck and so designed that water can be poured from it into the filler of the radiator without the use of a funnel.

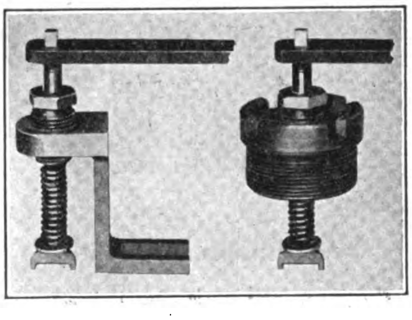
**Manufactured by the Martin Mfg. Co., Lancaster, O. Price, 50 cents.**

Martin Automobile Bucket.

## KANDIKID VALVE GRINDER.

No engine operates efficiently when the valves are so worn or pitted as to allow passage of gas when they are closed; there is also a certain element of danger which results from poorly fitting intake valves due to back firing. In either case grinding is the proper remedy. The Kandikid Valve Grinder is an ingenious little device for grinding one or more valves at one time. This device is designed for engines either with or without removable heads. This valve grinder may be fastened to the cylinder block when used upon engines with removable heads. When used with engines that are not equipped with removable heads it is screwed into the spark plug hole. The two types of fittings are clearly shown in the illustration.

**Manufactured by W. C. Brown, Niles, O. Price upon application.**



Kandikid Valve Grinder.

## SE-MENT-OL.

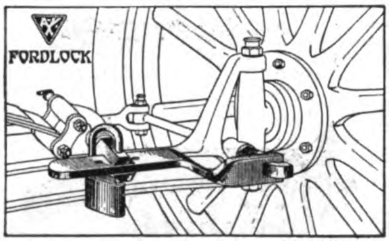
As a leaky radiator will cause untold bother to the touring motorist, it is policy for him to carry along a sealing compound in his tool kit. A compound which is made for this purpose is called Se-Ment-Ol. This chemical is poured into the radiator and mixes with the water contained therein. Immediately upon its exposure to the air through breaks in the radiating surface, it hardens, thereby sealing up the leaks.

**Manufactured by the Northwestern Chemical Co., Marietta, O. Price, 75 cents.**

## A-Y FORDLOCK.

The illustration shows the A-Y Fordlock as it is applied to a Ford car. This locking arrangement is applied to the steering spindle and front axle of the car, and when locked into place, keeps the wheels in one of three positions: Straight ahead, as shown, at the left, or at the right. The locking rod is made of heavy steel; the padlock itself of standard design. Though it would be nearly impossible, and very impractical, to tow the car any distance without removing the lock, it could easily be moved a short distance in case of fire, or to relieve traffic congestion.

**Manufactured by Angsten-Koch Co., Princeton Ave., Chicago, Ill. Price complete with Corbin lock, $3.50.**



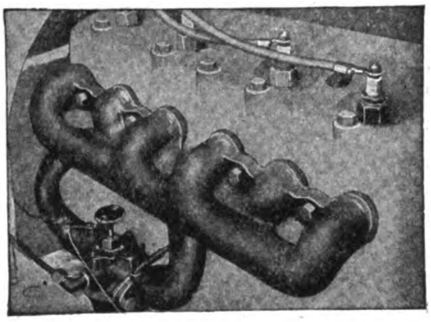
A-Y FORDLOCK.

## THE VAPORATOR.

Every motorist is interested in the reduction of fuel cost, and, it would seem that the only practical solution of this problem at the present time is to use kerosene or coal oil for fuel, rather than the more expensive gasoline.

The Vaporator, the makers say, is a practical and efficient device for the utilization of coal oil as a fuel. Not only a reduction in fuel cost is claimed, but also an increase in mileage per gallon. This device combines an exhaust and intake manifold, to which is attached the standard Ford carburetor. Attached to the front of the seat and connected with the manifold is an auxiliary gasoline tank holding 1 1/3 gallons. The gasoline is used simply for starting, after the engine has heated up, this fuel is shut off and the engine continues to run on kerosene, which is held in the main tank. The full equipment comes ready to attach and requires no special fitting or boring of holes.

**Manufactured by the Vaporator Mfg. Co., 2737 Washington Ave., St. Louis, Mo. Price, $16.50.**



Vaporator Equipment.

# A Simple Gasoline Problem:—

*If the*

# *Wilmo Manifold*

## Increases Gasoline Mileage 42% to 54%

***By Actual A. A. A. Tests***

# How Much Gasoline Money
# Does the User Save
# With Gasoline at 25c a Gallon?

Ask every customer that question and see his immediate interest in the Wilmo Manifold, the great conservor of gasoline.

We can show letters from users testifying to as high as 80% increased gasoline efficiency—but the official A. A. A. tests showing 42% to 54% increase should satisfy anybody.

Wilmo Manifold sales are up in the hundred thousands—all in six months.

Made for many makes of cars. See the list below.

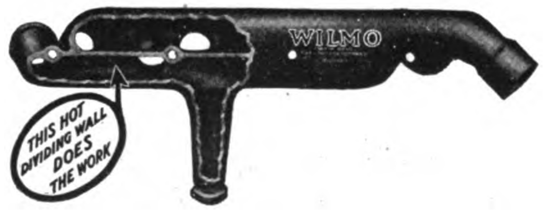
Help your customers cut gasoline cost and rid their engines of carbon the Wilmo way. Write today for interesting dealer information on this year 'round success.

**The Whittier Company**
**237 First National Bank Building Chicago**

### How It Does It

The Wilmo Manifold is a one-piece casting, forming a combination exhaust and intake manifold with a thin dividing wall between. The heat from the exhaust brings the walls of the intake up to the proper temperature to fully vaporize the gasoline before it enters the cylinder.

The Wilmo Manifold vaporizes every atom of gas right at the valve openings. Leaves no wet gas accumulating on the walls of the intake passage. Makes a four-cylinder as flexible as a six. Permits you to drive slower or faster, and all with much less gasoline consumption. Makes an old motor and carburetor work without loading up on gas.



### Retail Prices

| | |
|---|---|
| Ford—T | $ 7.50 |
| Maxwell—25 | 8.50 |
| Overland—59-69-79 | 10.00 |
| Studebaker—17-4 | 10.00 |
| Buick—4-34-35 | 10.00 |
| Saxon—6 | 10.00 |
| Overland—81-83 | 10.00 |
| Overland—80 | 12.50 |
| Oakland—6-32 | 12.50 |
| Buick—6-D44-45 | 15.00 |
| Studebaker—17-6 | 15.00 |

**Manifolds for other makes of cars will be added from time to time.**

### NO-LEAK-O PISTON RING.

Every motorist realizes what would happen if the lubricating oil was taken from the engine—bearings would be damaged, cylinders scored and probably the engine entirely ruined. The same thing is true, to a certain extent, when the lubricating oil is diluted, or mixed with kerosene or gasoline. Such an action results when unburned gasoline or oil escapes past the pistons to the engine base. The No-Leak-O Piston Ring or Oil Sealing Ring, is a specially designed piston ring that has a deep groove cut around the face of the ring, with a scraping edge, in combination with a lap joint, which is said to form a perfect seal of oil; that is to say, with the groove full of oil all around the ring, the gas cannot escape, the refuse of poor gasoline cannot work into the crank case, nor can the oil from the crank case work into the combustion chamber.

**Write for booklet M, Automobile Accessories Co., 816 W. North Ave., Baltimore, Md., or to Auto Appliance Co., room 500, 110 W. 34th St., New York.**

### DYER TOWING DEVICE.

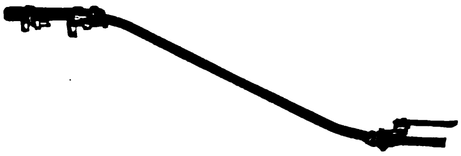
The Dyer Towing Device is a simple arrangement for fastening to the front axle of a Ford car, and making possible the towing of the car by another without the aid of a second driver. The device is designed for attachment to the axle and is fitted with a clamp, which is fastened to the steering spindle connecting rod. The other end of the device is fastened to the towing car. When a corner is turned the rear car is automatically steered by the device.

**Manufactured by the G. H. Dyer Co., Cambridge, Mass. Price upon request.**

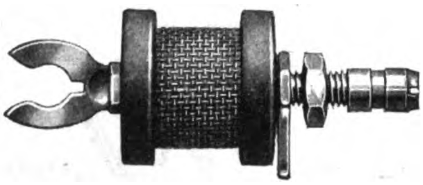
### UNIVERSAL SOLDER.

A preparation that is said to be useful in stopping leaks in radiators, water jackets, hot or cold water pipes, or generally used for making tight joints without the use of either heat or acid, is sold under the name of Universal Solder. The makers claim that this preparation is simple in application and that no special skill is required. It is put up in handy collapsible tubes with screw caps and is said to be a rapid seller for accessory dealers.

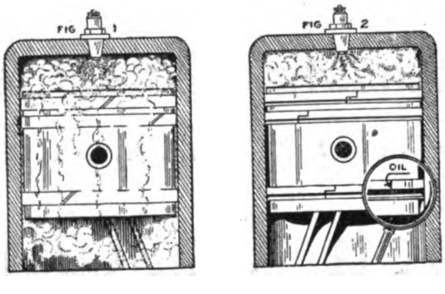
**Manufactured by Universal Solder Co., 66 Fort St., E., Detroit, Mich. Price upon application.**



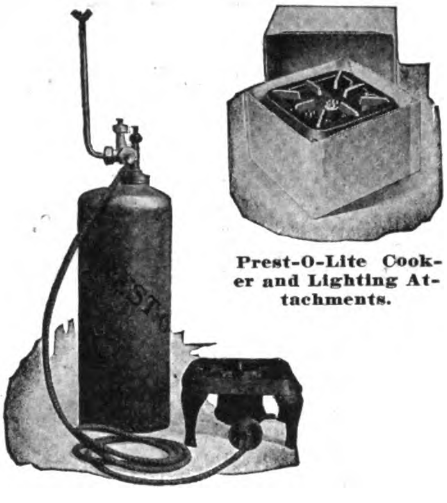
Dyer Towing Device.



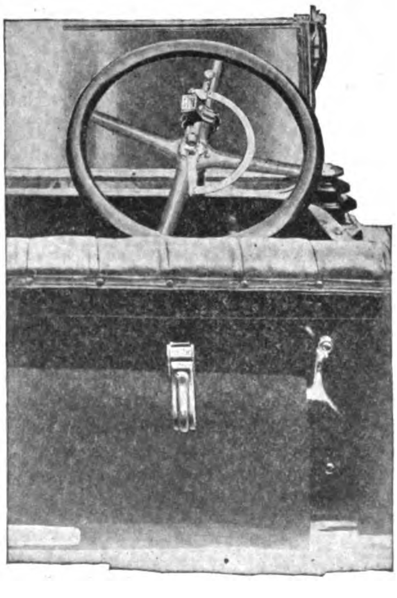
Speco Plug Energizer.



Before. After.
Application of No-Leak-O Piston Ring.



Prest-O-Lite Cooker and Lighting Attachments.



Utility Auto Lock.

### PREST-O-LITE COOKER.

The advent of the Prest-O-Lite camp cooking outfit will bring joy to the camping motorists who have long sought a compact and convenient stove for touring. As an added convenience, an ideal camp light may be provided, as shown in the illustration. The stove, or Auto Hot Plate, as it is called, measures eight by eight by five inches and weighs but six pounds complete and may be stored away under the seat of the automobile. The stove when turned full on consumes about 3½ feet of gas per hour, and is designed to be attached to the regular Prest-O-Lite tank. The heat of the full flame is sufficiently intense to boil a quart of water in three minutes. When the lighting outfit is used a two-way valve union is attached to the tank, one outlet being connected with the light, the other with the stove.

**Manufactured by the Prest-O-Lite Co., Inc., Indianapolis, Ind. Prices upon application.**

### SPECO PLUG ENERGIZER.

The Speco Plug Energizer is a device designed to be attached to the spark plugs of an engine. When the secondary current is passed through it the voltage is said to be increased and the amperage decreased, thereby prolonging the life of the spark plug electrodes. The manufacturers claim that when this device is used all plugs give the same intense, high frequency spark, no matter whether they are old or new, good or bad, dirty or clean, broken or whole.

**Manufactured by Speco Mfg. Corp., 1777 Broadway, New York City. Price upon request.**

### KING KARBON KILLER.

Carbon accumulating on piston heads where it becomes white hot and causes preignition, or back firing, which badly strains the crankshaft and tends to loosen the bearings, vitally affects the running of an engine and reduces its efficiency. King Karbon Killer is a preparation of highly concentrated chemicals, which is said to do away with all carbon troubles. One cube is placed in each five gallons of gasoline, causing, the makers state, an increased mileage efficiency of not less than 25 per cent. With every explosion a neutralized oxygen gas is generated, which gradually disintegrates the carbon deposits, the loosened particles of carbon passing out through the exhaust.

**Manufactured by King Karbon Killer Corp., 15 Park Row, N. Y. Price, $1 for 24 cubes.**

### UTILITY AUTO LOCK.

The Utility Auto Lock is a little device which may be used in many places, consisting of two pressed steel jaws which are adjustable within a small radius, fitted with teeth on their ends and so arranged that they may be brought together if necessary. The action of the jaws is controlled by a unique locking device that is unlocked by a special key. This device may be used to lock the spark and throttle rods to the quadrant, for locking robes to the robe rail, for locking pockets together and many other uses.

**Manufactured by the Backus Novelty Co., Smethport, Pa. Write for prices and catalogue.**

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Here's the outfit that has a patented anti-syphoning hose draining valve which guarantees against syphoning by the manipulation of the hose and assures constant measurement for both hose and can discharge—a feature not possible with any other portable made.

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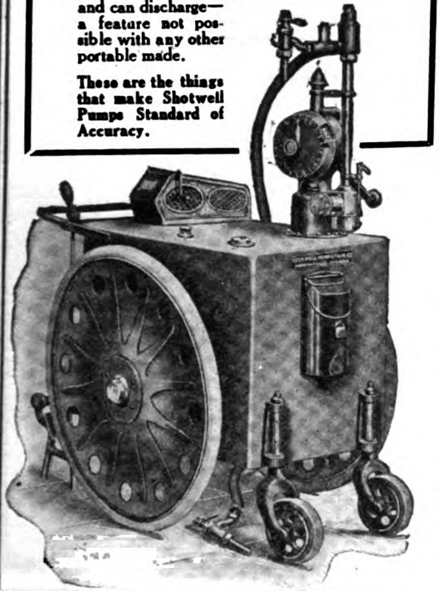

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SCOUT
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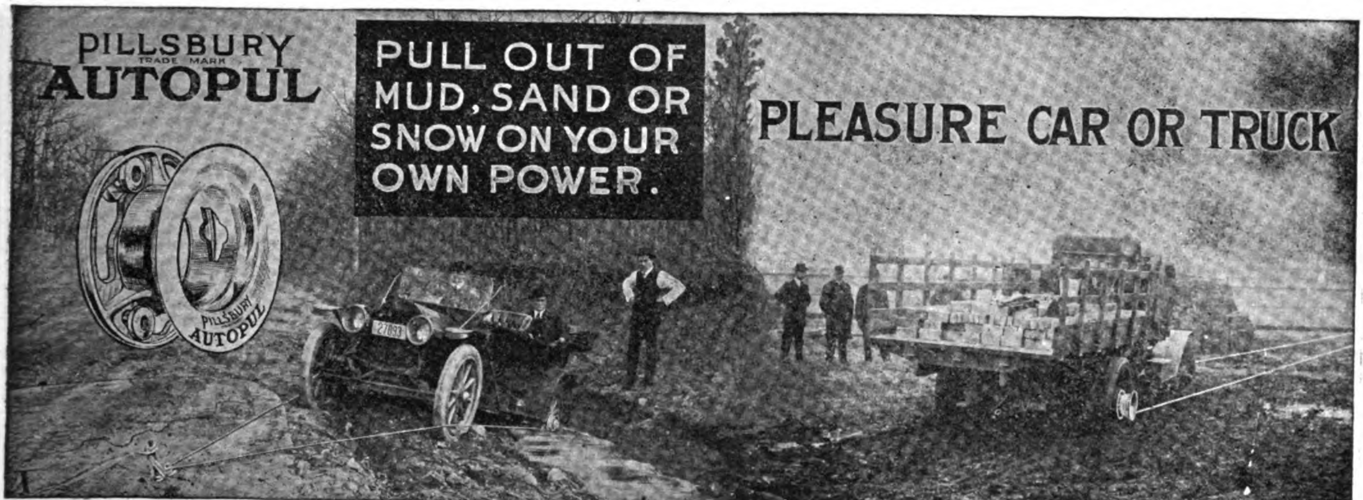

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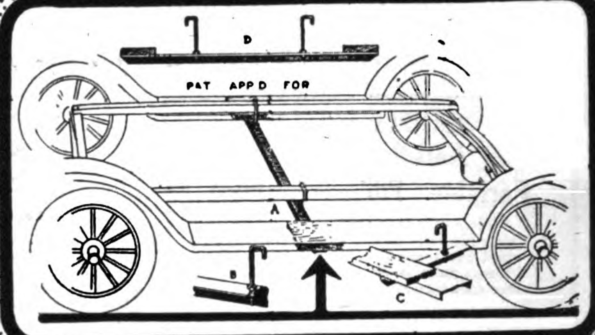

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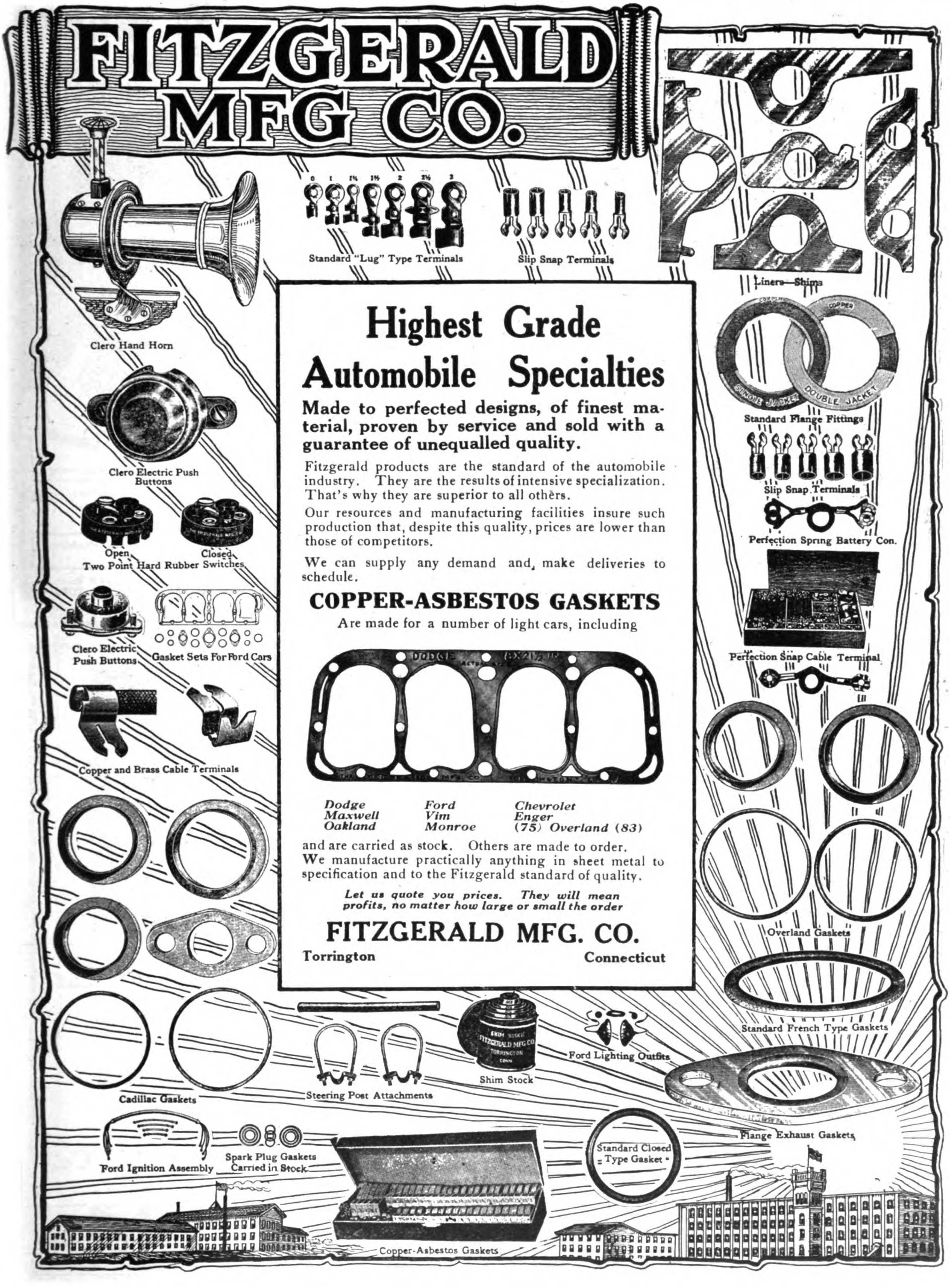
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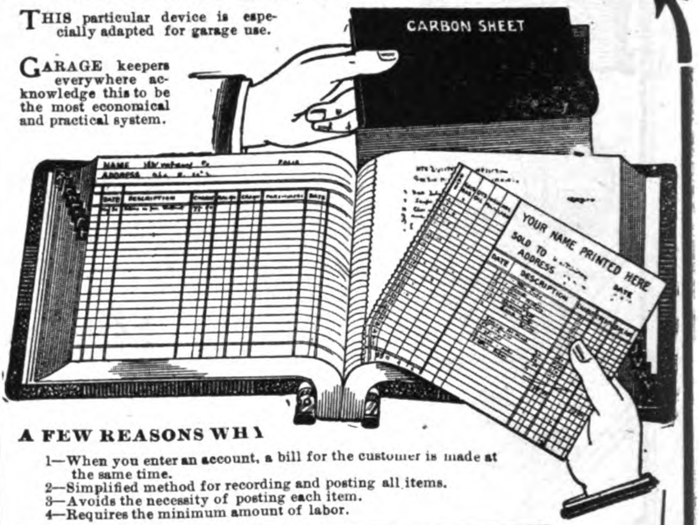
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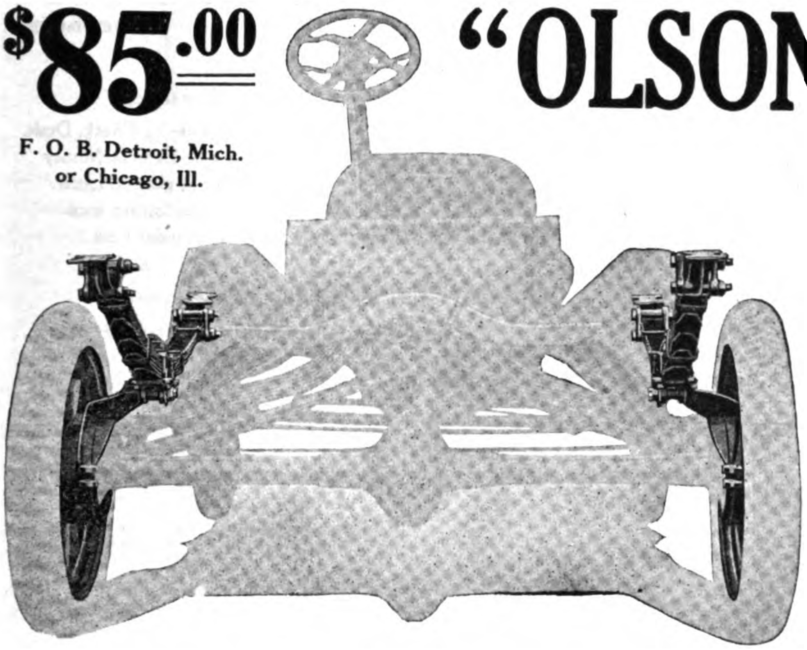

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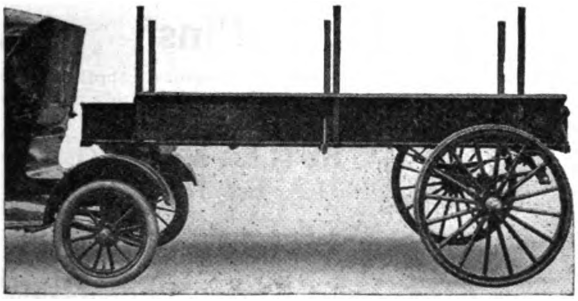

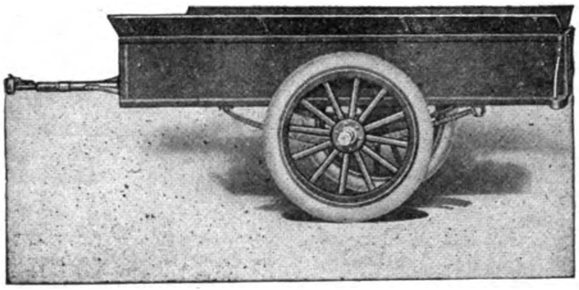

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| EQUIPMENT | Complete Rocking Fifth Wheel ready for attaching | |
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Published the 15th
of Each Month.

D. O. Black, Jr., Secretary
Times Building, Pawtucket, R. I.

Entered as second class matter. December 30, 1911, at the Postoffice at Pawtucket, R. I., under Act of Congress of March 3, 1879.

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## INDEX TO ADVERTISERS

Page
A. B. C. Starter Co.............Cover
Adamson Mfg. Co.................. 9
Advance Auto Accessories Corp... 3
Aerofram Co., The................52
American Motors Parts Co.........54
Apperson Bros. Automobile Co.....63
Automobile Accessories Co........54
Auto Parts Co....................54
Auto Salvage Co., Inc............55

Bearings Service Co..............61
Bowser & Co., Inc., S. F.........59
Brunner Mfg. Co..................13
Bunting Brass and Bronze Co......56
Butler Mfg. Co...................54

Champion Ignition Co.............10
Chicago Pneumatic Tool Co........ 8
Chicago Tubing and Braiding Co...56
Cutter, Geo. A...................59

Dearborn Truck Co................12
Detroit Battery Co...............64
Detroit Magneto Exchange.........54
Detroit Piston Ring Co...........64
Detroit Truck Co.................64
Diamond Auto Specialty Co........55
Dixon Crucible Co., Jos..........60
Dow Wire and Iron Works..........50
Dyer Co., G. H................... 1

Faw, Inc., J. H..................61
Fisk Rubber Co...................39
Fitzgerald Mfg. Co...............51

Garford Motor Truck Co...........56
Gardner Governor Co..............64
Gibson-Hollister Mfg. Co.........56
Greb Co., The....................58
Greenfield Tap and Die Corp......62

Harton & Co., Thos J., Inc.......52
Harvey Spring Co.................57
Haywood Tire and Equipment Co.. 2
Hess-Bright Mfg. Co..............62

Indian Refining Co...............52
International Metal Polish Co....52

Jandorf Auto Co..................55
Jenkins Vulcan Spring Co.........64
Johnson Gas Appliance Co.........58

K & W Rubber Co.................. 4

Mabey's Electric and Mfg. Co.....61
Martin Mfg Co., The..............57
Maxwell Bros.....................55
Monarch Governor Co.............. 5
Mossberg Co., Frank..........Cover
Motor Specialties Co.............60
Mueller & Co., R. S..............62

National Cash Register Co........11

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**(Unguaranteed)**

**$7.50**

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## INDEX TO ADVERTISERS
(Continued)

Page
National Exposition for Ford Accessories, Inc.................... 6
New Departure Mfg. Co............63
New Era Spring and Specialty Co..59
Niehoff & Co., Inc., Paul G......61
Norma Co. of America.............63

Pierce Governor Co...............57
Pillsbury Mfg. Co................49
Poughkeepsie Utilities Corp......60
Prest-O-Lite Co., Inc............63
Puritan Machine Co...............54

Ross Automobile Co............... 7
Ross-Gould List and Letter Co....56
Scaife, Wm. B. & Sons Co.........63
Schrader's Son, Inc., A..........58
Service Gear and Machine Co......55
Shotwell Pump and Tank Co........49
Standard Woven Fabric Co.....Cover
Starrett Co., L. S...............14
Stevens & Co.....................59
Stockbridge Body Co..............53
Sullivan Motor Car Co............56
Swedish Crucible Steel Co........53

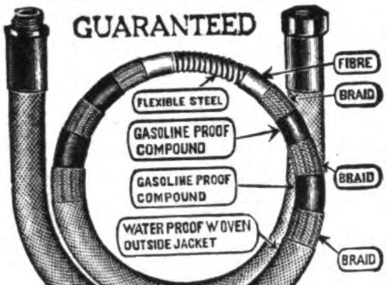
Territory........................54
Ton-A-Ford Truck Co..............62

United Engine & Mfg. Co..........64

Vanderpool Co....................64

Walden-Worcester, Inc........Cover
Weston Electrical Instrument Co..58
Whittier Co......................47
Williams Foundry and Machine Co..62

YOU WANT AND NEED EVERLASTING GASOLINE HOSE



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**One Model, 3,000 Lbs. Capacity**
**Chassis Price, $1,600**

***Write for complete details***

**SULLIVAN MOTOR CAR CO.**
**Rochester, New York**

**Bunting Bearing Bronze** IN Cored Bars

BUNTING BEARING BRONZE

Bunting Bearing Metal is standard today with both Manufacturer and Repairman.

Is for sale by most any Jobber or can be purchased direct from us.

**STOCK SIZES**

| PIECE NO. | Outside Diameter | Inside Diameter | Length | Approximate weight |
|---|---|---|---|---|
| A | 1 | ½ | 12 | 2 |
| B | 1¼ | ½ | 12 | 3½ |
| C | 1½ | ¾ | 12 | 5 |
| D | 1¾ | ¾ | 12 | 7 |
| E | 2 | 1 | 12 | 8½ |
| F | 2¼ | 1¼ | 12 | 10 |
| G | 2½ | 1½ | 12 | 11½ |
| H | 2¾ | 1¾ | 12 | 12¾ |
| I | 3 | 2 | 12 | 13¾ |
| J | 3¼ | 2¼ | 12 | 15½ |
| K | 3½ | 2½ | 12 | 17 |
| L | 4 | 3 | 12 | 21 |
| M | 4¼ | 3¼ | 12 | 20 |

**The Bunting Brass & Bronze Co.**
727 Spencer Street Toledo, Ohio

JUMBO
MOLITE
MADE IN U.S.A.

**JUMBO SPARK PLUGS**

***List Price 50 Cents***

**PERFECT SERVICE GUARANTEED**

For the life of the car.
Write for details of our sales proposition.

**Gibson-Hollister Mfg. Co.**
BOSTON, MASS.

***Subscribe to***
***THE ACCESSORY AND GARAGE JOURNAL***
***PUBLISHED MONTHLY***
**Times Building Pawtucket, R. I.**

# LISTEN!

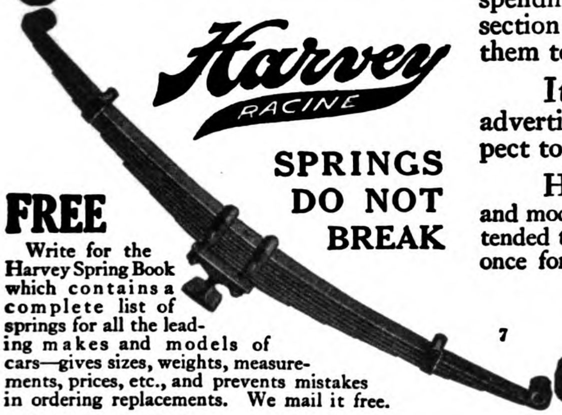
## *You Dealers* and *Repairmen* Who Are Particular About The Quality Of The Goods You Sell

WHEN you sell a Harvey spring there are never any kicks or "comebacks," because Harvey springs give absolute satisfaction to the car owner. They have no bolt hole at center—no weak spots anywhere—and are guaranteed from end to end against all defects. If a spring proves defective at any point, we will replace it.

We are partners with every Harvey dealer. Not silent partners, either—we're spending thousands of dollars this year to post car owners in every section of the United States on the merits of Harvey springs—urging them to look for a Harvey dealer when in need of replacements.

It will pay you—big—to connect with this live-wire advertising. Let people know you handle Harvey springs if you expect to get your full share of spring replacement business—and profits.

Harvey springs are made for over 600 of the leading makes and models of cars and each spring is an exact duplicate of the spring it is intended to replace—fits with an accuracy that will surprise you. Write us at once for name of your nearest jobber.



**SPRINGS DO NOT BREAK**

**FREE** Write for the Harvey Spring Book which contains a complete list of springs for all the leading makes and models of cars—gives sizes, weights, measurements, prices, etc., and prevents mistakes in ordering replacements. We mail it free.

7

**HARVEY SPRING COMPANY**
851 Seventeenth Street, RACINE, WISCONSIN

# PIERCE Governors For Ford Cars

The owner's hand controls the speed of every PIERCE equipped Ford truck or delivery wagon, no matter when or where it is driven. It makes no difference who the driver is, he cannot exceed the speed for which the governor is set—and the owner decides the speed.

A PIERCE GOVERNOR don't cripple the motor when heavy loads, steep grades, or slippery traction demand extreme power. It is the only governor made that will control the speed of a Ford truck, and leave the motor entirely free in reverse and low gears.

Stop fast driving and you eliminate 75% of all collisions and accidents—reduce repair costs one half—and make tires wear longer. PIERCE GOVERNORS pay for themselves a dozen times a year.

*A live proposition for live dealers*

**PIERCE GOVERNOR COMPANY**
*World's Largest Governor Builders.*
ANDERSON, INDIANA, U.S.A.

FOR FORD OR CHEVROLET

**List Price, 75 Cents Each**

**An Ideal Equipment For Cars Without Door Pockets** that can be quickly installed and affords extreme convenience. Made of highest grade leather cloth, that will not crack or peel and has longer endurance than leather.

A fast selling profitable accessory. When ordering always state whether for Ford or Chevrolet.

Martin leather cloth specialties, the finest line made, includes Tire Covers, Radiator Robes, Tube Cases, Engine Robes, Robe Rail Bags, Water Buckets, Headlight Dimmers, Etc. Not equalled for quality, and sold for moderate prices.

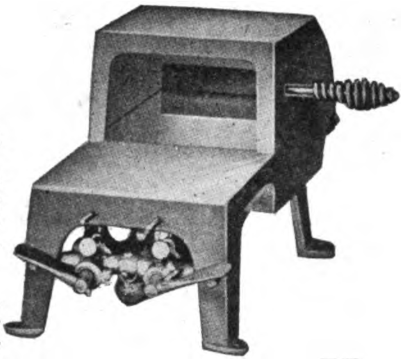
*Write for Jobbers' and Dealers' Catalogue and Quotations*

**Martin Manufacturing Co.**
LANCASTER OHIO

# Do Repair Jobs Quicker With a Johnson Gas Furnace

**The Johnson No. 101 Bench Furnace is the handiest gas appliance for heating soldering coppers, hatchet irons, for case-hardening, heating for tempering or annealing.**

**It is equipped with two powerful atmospheric burners that obtain instantly a heat of 1600 to 1800 degrees F, in the heating chamber.**



NO FORCED BLAST REQUIRED

Takes the place of an expensive blast furnace. Perfect combustion is insured, regardless of the pressure or quality of the gas. There's no soot or dirt. No danger of decarbonization because of neutral flame. **Lights instantly from pilot. Uses either manufactured or natural gas.**

**Unequalled for manufacturers as well as garages and repair shops. If your jobber cannot supply you, write us direct for No. 101 Johnson Furnace, or free illustrated literature.**

**Johnson Gas Appliance Co., - - Cedar Rapids, Iowa**

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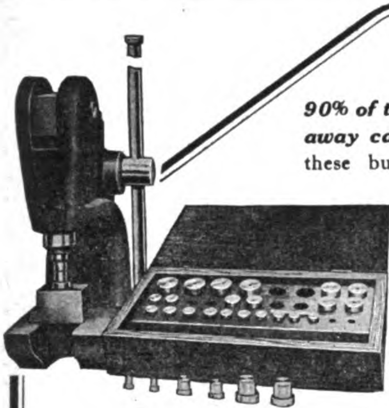
# Don't Junk Your Old Bushings!



Swedges in all sizes from 7-16" to 1 3-16"

*90% of the Bushings that have always been thrown away can be made better than when new!* After these bushings have been put through one of our Bushing Presses, the metal is closer-grained and the bushing fits tighter. *One fifth of the expense and labor in overhauling a car goes into the bushings.* With our Bushing Press you can take a set of six connecting rods, and in less than half an hour swedge and ream them to a perfect fit. These are better than new bushings, which would have cost at least ten dollars—pretty good pay for a half hour's work! The Beach Bushing Press saves all the cost of new stock; no delay from sending to the factory; no necessity to carry in stock a dozen different size bars of cored bronze. *Write us today!*

## BEACH PROCESS BUSHING PRESS

**THE GREB COMPANY, 202 State Street, BOSTON, MASS.**

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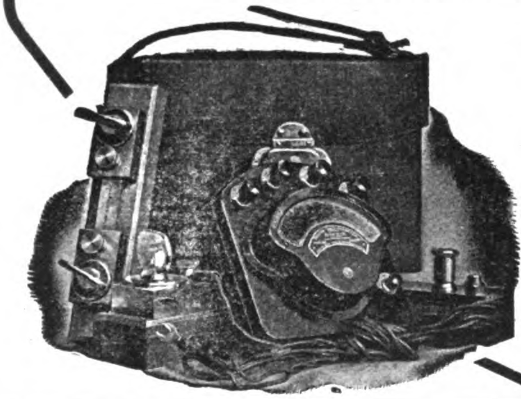
# Electrical Repairs Bring the Big Profits

If you can repair and adjust Electrical Starting and Lighting Equipment, you will get the cream of the garage business. With the increasing demand for this sort of service, you must equip to handle the business or lose it.



## Weston

Model 280

**GARAGE TESTING INSTRUMENT**

Is the best, the most reliable, and therefore, the cheapest electrical equipment for you. It enables you to determine promptly and accurately the condition of the electrical equipment of any automobile, just where the trouble is, and just how to remedy it. Write for our Special Proposition.

WESTON ELECTRICAL INSTRUMENT CO., 103 Weston Ave., Newark, N. J.

*23 Branch Offices in the Larger Cities*

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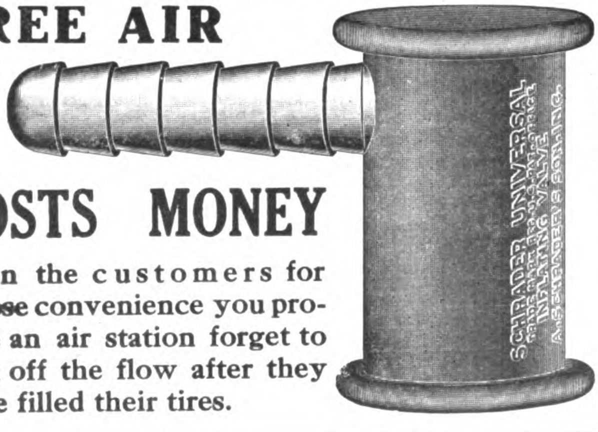
# FREE AIR COSTS MONEY

when the customers for whose convenience you provide an air station forget to turn off the flow after they have filled their tires.



**Guard against this waste by attaching a**

## Schrader Automatic Inflating Valve

**to your air hose.**

**Thanks to this appliance your bottled air locks itself into the tank the minute it is taken off the tire-valve. You turn on the air by pressing the nozzle of the inflating valve against the tire-valve and you turn it off by removing the device from the tire-valve.**

**Made to fit any diameter of hose from 1-4 in. to 5-8 in.**

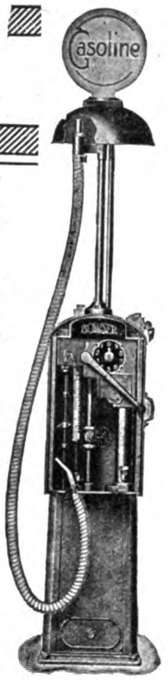
**PRICE ONE DOLLAR**
in U. S. A.

***Manufactured by***

**A. SCHRADER'S SON, Inc.**
**800 Atlantic Avenue, Brooklyn, N. Y.**

***Schrader products were awarded a Grand Prize and two Gold Medals at the Panama Pacific International Exposition. "There's a reason."***

**BOWSER**
ESTABLISHED 1885

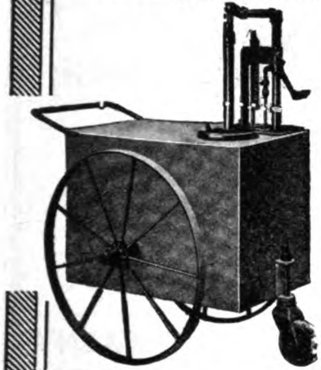


# Oil and Gasoline Storage Systems

***Equip your garage with these Oil, Time and Money Savers***

They will do for you just what is expected of dependable, accurate and durable oil handling equipment; in addition, they help you give your customers real service.

Bowser Systems protect oils and gasoline from deterioration, evaporation, dust, careless handling; deliver accurate quantities; are fireproof; attractive.



Write for complete information

"RED SENTRY"
Gasoline Outfit

**S. F. Bowser & Co.**
*Incorporated*
Ft. Wayne, Indiana, U. S. A.

Sales Offices in All Centers

Representatives Everywhere

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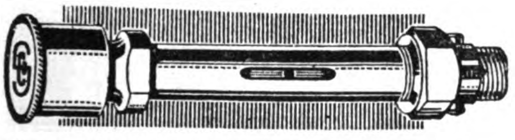
**STEVENS NEW YORK**



# STEVEN'S SHACKLE BOLTS

**HIGH GRADE—BUT NOT EXPENSIVE.**

Particularly well adapted for general repairs and replacements. Furnished complete with grease cup, nut and adjusting washers. List price, each, **40c.**
Discount from Your Jobber.

**STEVENS & CO., 375 Broadway, New York.**

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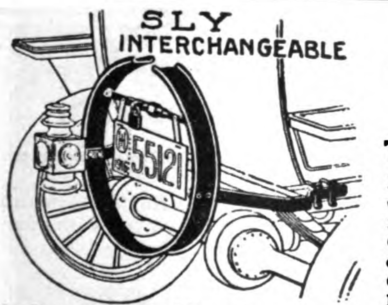

## SLY Interchangeable and Cradle Type TIRE HOLDERS

**Interchangeables quickly adjustable for all Ford and Chevrolet tires and demountable rims. Combines place for lamp, number plate lock and tire, holding by expansion grip on inside of tire. No chafing. Clamps to Ford or Chevrolet frame without drilling or bolting. At all jobbers, or write**

**New Era Spring & Specialty Co.**
**865-A Woodward Ave.** **Detroit, Mich.**

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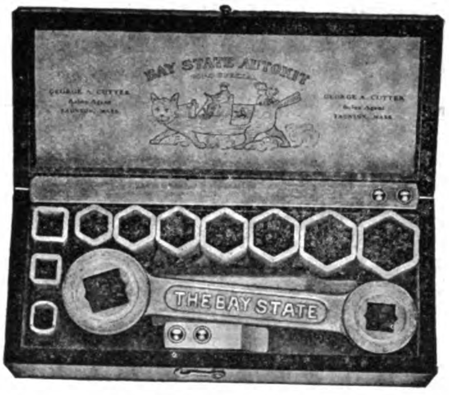
## —ON·THE·ROAD—

## ALL PRACTICAL MEN USE

# BAY STATE Autokit Wrench Sets

**THEY know from experience that time and money represent value, and car and truck service depends on quick but careful work. With good tools time and expense are minimized and service is insured.**

**BAY STATE Autokit Wrench Sets are selected tool combinations of sockets, shank and ratchet handle so sized that any work on any part of any machine can be done quickly, conveniently and permanently. A set can be carried on the road, but is equally serviceable in the garage.**



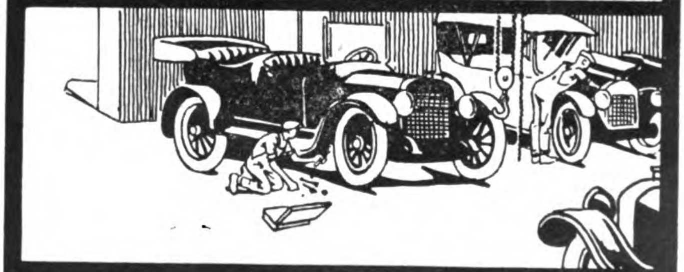
**BAY STATE AUTOKIT NO. 3**

Every set is unconditionally guaranteed to the buyer.

| | |
|---|---|
| **Set No. 1, 31 Sockets** (Garage or Shop) | **$10.00** |
| **Set No. 2, 12 Sockets** (Car) | **7.50** |
| **Set No. 3. 11 Sockets** (Ford Outfit) | **4.00** |

**JOBBERS AND DEALERS**—Literature describing these sets and trade quotations sent at request.

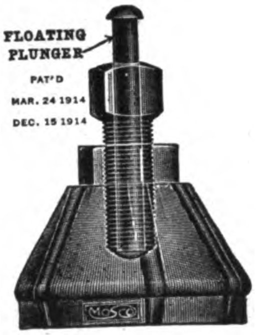
**GEORGE A. CUTTER**
Sales Agent
**TAUNTON** **MASSACHUSETTS**



## —IN·THE·SHOP—

MOSCO

## FLOATING PLUNGER WHEEL PULLER



**Makes a "Frozen" or "Stuck" wheel come off easily. Strike the plunger, turn the screw, strike again and the wheel comes off without injury to hub-threads, spokes or axle.**

**Made for the following cars:**

Abbott
Apperson
Auburn
Buick
Case
Chalmers
Chandler
Chevrolet
Daniels
Davis
Dort
Empire
Ford
Franklin
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Interstate
Jeffery
Jordan
Lexington
Liberty
Maxwell
Milburn Electric
Mitchell
Moline Knight
Oakland
Oldsmobile
Overland
Paige
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Pierce Arrow
Premier
Reo
Saxon
Velie
Vim
Westcott

*Your jobber has them in stock.*
*New models continually being added.*
*List of models and prices on application.*

MOSCO

## Timer For Ford Car

Extra heavy pressed steel shell, aluminum finish. Insulating ring of gray bone fibre. Terminals insulated all the way through. One-hand, self-closing oiler. Pressed steel arm and compression spring on brush assembly. Brush assembly sold separately. Interesting prices.

**MOTOR SPECIALTIES CO.**
MANUFACTURERS
WALTHAM MASS.

## Dependability

is the reason practically all racing drivers lubricate with Dixon's.

is the secret of Dixon's growing popularity among motorists.

is the dealer's guarantee that he can build business of the better kind by banking on

**DIXON'S**
**GRAPHITE**
**Automobile**
**LUBRICANTS**

*Write to us for Dixon's Dealer's Deal No. 49-G*

Made in Jersey City, N. J., by the
**JOSEPH DIXON CRUCIBLE COMPANY**
JERSEY CITY, N. J.
Established 1827

DO YOU HEAR
the UTILITY KID signaling you to go ahead and get
UTILITY
VARNISH
RENOVATOR
GO AHEAD

ONE OF THE REASONS

**The Particular Auto Owner**

*Uses, Values, Requests, Utility Varnish Renovator*

It is guaranteed not to injure any varnish finish on which it is used.

The best sales proposition of the year for jobbers and dealers. A business increaser and a money maker. Write for it.

*LIST PRICES;*

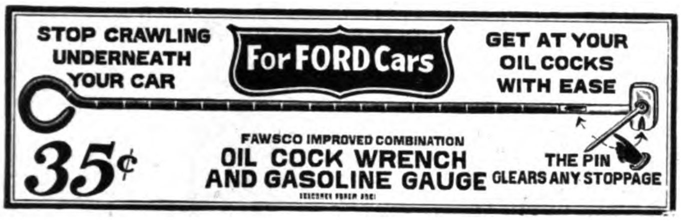
*4 Ounces* 25c *Quarts* $1.00
*12 Ounces* 50c *Gallons* $3.00
*Sprayer* 25c

**POUGHKEEPSIE UTILITIES CORP.**
46 Winnikee Ave. POUGHKEEPSIE, NEW YORK

**Fawsco IMPROVED Combination**

**Gasoline Gauge**

**Oil Cock Wrench and Cleaner**



STOP CRAWLING UNDERNEATH YOUR CAR

For FORD Cars

GET AT YOUR OIL COCKS WITH EASE

35¢

FAWSCO IMPROVED COMBINATION OIL COCK WRENCH AND GASOLINE GAUGE

THE PIN CLEARS ANY STOPPAGE

*Large easel display card like above with each order.*

**Retails 35c Trade Doz. $2.80**

Packed 12 in Heavy Carton with DISPLAY STAND FOR ONE—Balance in Envelopes.

**THE NECESSARY TOOL**

**EUREKA Valve Grinding Compound**

**THE ORIGINAL PASTE GRINDING COMPOUND**

A Valve Grinding Compound for Automobile Valves or anywhere that steam, gas or water-tight joints are necessary. Will grind valves that are in the worst possible condition gas-tight in twenty minutes. This is a free cutting compound and always presents a sharp cutting edge to the work, absolutely free from scratching or grooving; the only quick, clean and smooth cutting article of its kind on the market.

EUREKA
VALVE GRINDING CO
TRADE MARK
ONE POUND CAN
MANUFACTURED BY
AUTO EQUIPMENT CO.
HOLLYWOOD AVE. EAST ORANGE N.J.

**Pound Cans, Each $1.20**

41 Warren St., N. Y. City. **J. H. FAW, Inc.** Branch: Atlanta, Ga.

*Our Literature on Request*

ELECTRIC GLUE POT

Mabey's Dry Heat Electric

**Glue Pot**

No flame; no soot or smoke. All danger of fire is eliminated

| Capacity | Price without cover |
|---|---|
| 1 qt. | $ 9.50 |
| 2 qts. | 11.00 |
| 3 qts. | 12.75 |
| 4 qts. | 15.75 |

**Century Automobile Cigar Lighter, Complete $1.00 Each, F. O. B. Indianapolis.**

*DEALERS—Write For Prices.*

**MABEY'S ELECTRIC & MFG. CO.**

968 Ft. Wayne Avenue INDIANAPOLIS, IND.

**BEARINGS SERVICE COMPANY**

Nation-wide Service on Bearings

New York
Detroit
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PAUL G. NIEHOFF & CO.
METALLURGICAL LABORATORIES
NORTH CLARK STREET AT KINZIE CHICAGO, ILLINOIS

**Have You received a copy ?**

Our catalog contains more than 500 staple repair items, such as Magneto Repair Parts, Platinum Contact Screws, Breaker Arms, Brushes, Distributor Parts and Coil Parts, also Platinum Contacts for Magneto Repair Work and Tungsten Contacts for Distributors and Coils. These items are purchased by every car owner and you should be able to supply them.

There are also listings and illustrations on Starter and Generator Brushes, giving you the name of the car, year, model and brushes to be supplied. This is very valuable data which you should have on record.

This catalog also gives you information as to what systems are used on various makes of cars so as to enable you to intelligently serve your customers' needs. It will help you to build up a more permanent business.

We furnish a special "CASH REGISTER OF CONTACT PARTS" free with an assortment of parts.

This is a most complete and comprehensive catalog published on Repair Parts and Contacts. Our jobbers can serve you.

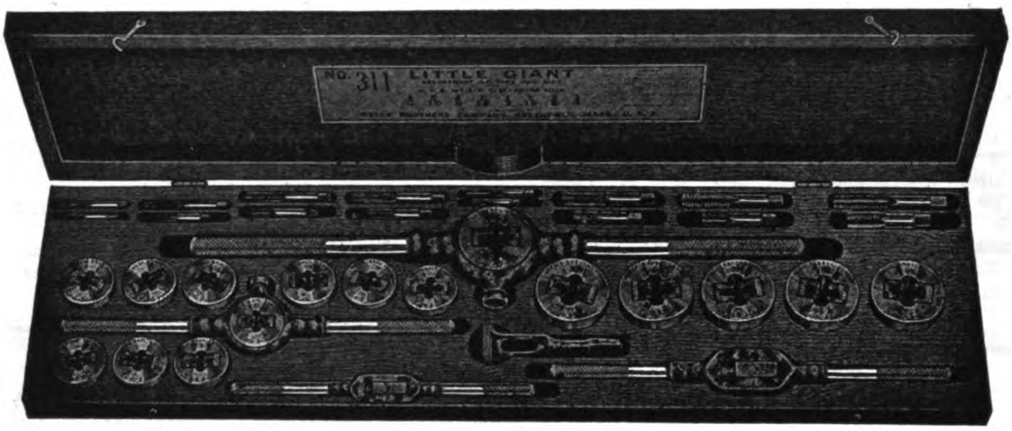
In buying request "NIEHOFF REPAIR PARTS." THEY ARE GUARANTEED.

**PAUL G. NIEHOFF & CO., Inc., Clark St. at Kinzie, Chicago, Ill.**

TRADE MARK AND NAME REGISTERED BY PAUL G NIEHOFF & CO INC CHICAGO

# Little Giant Combination Screw Plates

**Both United States and S. A. E. Standards**



These assortments are particularly valuable in the automobile repair shop where a considerable amount of threading is done. Each die is contained in its own collet and is adjusted to size. There is also a Bit Brace Die Holder for cleaning up battered threads in hard-to-get-at-places.

Every need of the manufacturer, the garage and repair man, or the car owner who makes his own repairs, for tap and die assortments can be supplied from our big line.

Send to-day for the circulars "Tools for the Automobile" "First aid in the up-keep of the Automobile."

**Greenfield Tap and Die Corporation, Greenfield, Mass.**

**New York Chicago Philadelphia Galt, Ontario**

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## DO TIRE REPAIRING-

as a separate business department of your Garage. Business easy to get, grows steadily, and pays well; only small capital required and opportunity everywhere. For best work and surest profits use

## Akron-Williams

**TIRE REPAIR EQUIPMENT**

*Used and recommended by 60 Leading Tire Companies*

*Send for booklet No. 12 and catalogue on complete outfits for every size garage.*

**THE WILLIAMS FOUNDRY & MACHINE CO.**
**Ash Street, Akron, Ohio**

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HESS-BRIGHT
BALL BEARINGS
"THE INIMITABLE BEARING"
DISTRIBUTORS IN EVERY CITY OF IMPORTANCE
THE HESS-BRIGHT MANUFACTURING COMPANY
PHILADELPHIA, PENNSYLVANIA, U.S.A.

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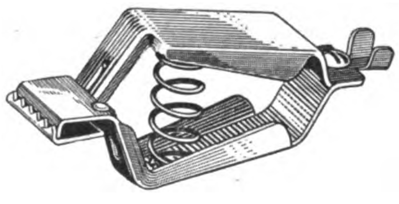
**Hook Up Your Batteries With Universal Battery Charging Clips**



They enable you to charge lighting and starting batteries without disconnecting them from the car.

Made of steel—lead plated—may be used over and over again.

No. 21-A—1½" spread of jaws.

Sample mailed postpaid for 15c in stamps.

Single Lots, Each 20c Lots of 10, Each 15c Lots of 100, Each 12 1-2c

**R. S. MUELLER & CO., 431 High Ave., S. E., Cleveland, Ohio.**

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**THE MINIMUM IN DELIVERY COST**

## TON-A-FORD

(Trade Mark—Foreign Rights Reserved)

## Extension Chassis, $345

**F. O. B. RACINE**

Combined with a Ford Chassis (new or old) makes a Powerful Ton-Truck, with Ton-and-a-Half capacity.

**Dealers:** Write for specifications and our agency proposition

**TON-A-FORD TRUCK CO. 15th St., RACINE, WIS.**

## 48 to 56 Horsepower—Only 3000 Pounds

## IDEAL COMBINATION

Mighty power with light weight, joined as only the Apperson Brothers know how—result, gliding movement at all speeds, wonderful comfort, unyielding endurance. Sixes and Eights.

**APPERSON BROTHERS AUTO. CO., KOKOMO, IND.**

# APPERSON

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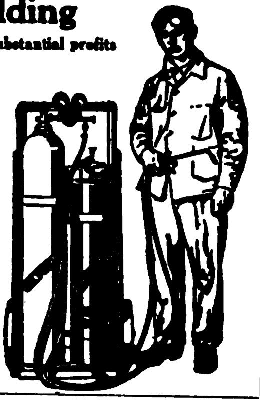
## Add to Garage Profits by Oxy-Acetylene Welding

Savings made please your patrons and pay good substantial profits

# PREST-O-LITE

**Dissolved Acetylene**
**(Ready-made carbide gas)**



adds to the efficiency and usefulness of any good welding equipment. We furnish thoroughly high grade welding apparatus for $75.00. (Canada $100.00). The average user will also need gas cylinders at an additional cost, and about $10.00 worth of welding supplies. Truck and special equipment for cutting operations at extra cost.

***Send for details of Prest-O-Lite Service for Oxy-Acetylene Welding.***

**The Prest-O-Lite Co., Inc.**

*World's Largest Makers of Dissolved Acetylene*

Main Office & Factory, 309 Speedway, Indianapolis
Can. Gen. Office, Dept. O.-9, Toronto, Ont.

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# NEW DEPARTURE BALL BEARINGS

ND

American Made
FOR
American Trade
QUALITY
FIRST

THE NEW DEPARTURE MANUFACTURING CO.
CONRAD PATENTS LICENSEES
BRISTOL, CONN., U. S. A.

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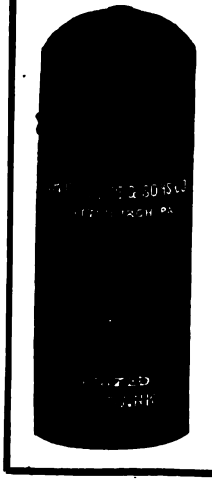

## SCAIFE COPPER-BRAZED

# AIR TANKS

are positively guaranteed to hold air indefinitely without loss of pressure.

## CAUTION

Do not confuse Scaife Copper-Brazed Tanks with the cheap Welded or Soft-Soldered Tanks made by others.

We Also Manufacture

**SCAIFE GASOLINE STORAGE OUTFITS**

*Send for Catalogues.*

**WM. B. SCAIFE & SONS CO.,**
First National Bank Bldg. PITTSBURGH, PA.

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# "NORMA"

# BALL BEARINGS

(Patented)

Because it is not easy to distinguish between engine failure and ignition failure—and because many a good engine and many a good car has been condemned for faults of its ignition—and because engine dependability and car performance depend so largely upon magneto dependability and generator performance — the manufacturers of cars of the better class have standardized on "NORMA" equipped electrical accessories. They have found that the use of "NORMA" Bearings in a magneto or a lighting generator is an evidence of quality throughout that accessory. They have learned that "NORMA" Bearings are an important factor in assuring the over-all dependability of their car.

***Be Sure—See That Your Electrical Accessories are "NORMA" Equipped***

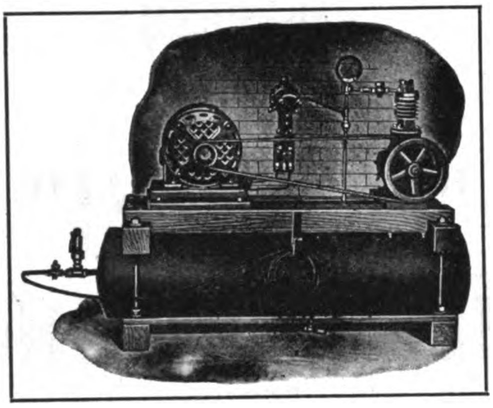
## THE NORMA COMPANY OF AMERICA

1790 BROADWAY NEW YORK

Ball, Roller, Thrust and Combination Bearings.

# GARDNER LINE

## *Free Air Unit*



**Free Air Unit** One of the many outfits we manufacture

**WE HAVE A PUMP FOR EVERY SERVICE**

***Economical — Efficient and Cheap***

**CHICAGO**
1702 Fisher Bldg.

**NEW YORK**
302 Singer Bldg.

**PHILADELPHIA**
604 Arch Street

**LOS ANGELES**
Rix Compressed Air & Drill Co.
409-11 E. Third St.

**SAN FRANCISCO**
Rix Compressed Air & Dr ill Co
505 Howard St.

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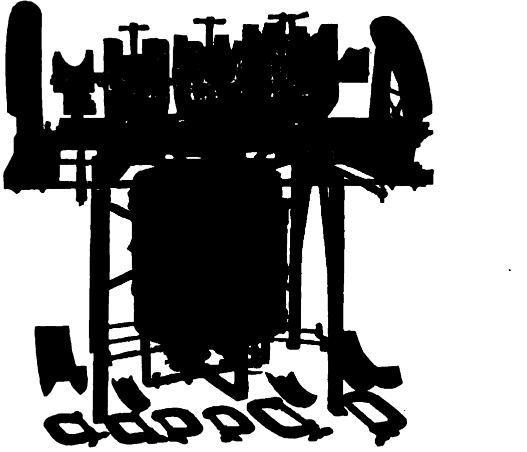

*Vanderpool 3 Cavity Vulcanizer*

**VANDERPOOL CO,, Springfield, Ohio**

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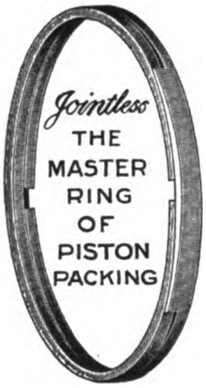
Jointless
THE MASTER RING OF PISTON PACKING

# Jointless Piston Rings

There are no substitutes for Jointless Piston Rings. The Jointless affords every quality found in other rings and assures to all users a permanent, gas tight ring, more power, less carbon, increased mileage, less gasoline and lubricating oil.

The Jointless eliminates all usual piston ring troubles. It is finely constructed and its efficiency makes the Jointless a money making and saving proposition for any owner of a pleasure car or truck.

**List Price $1.00**

**Sold by all Jobbers and Dealers.**

**DETROIT PISTON RING CO.**
53 Richmond Ave. Detroit, Mich.

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# DETROIT BATTERIES

For every make and model of motor car carrying an electric starting system. Replacements on cars no longer manufactured can be had promptly.

**Detroit Battery Co.**
Detroit, U. S. A.

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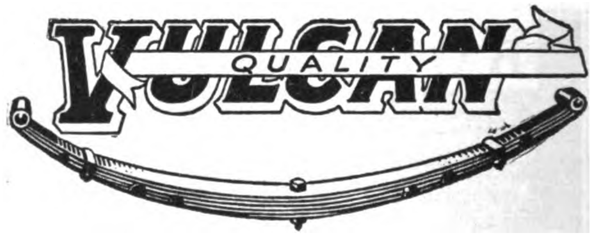
# In Stock—For Every Car



Write FOR CATALOG AND DISCOUNTS

DISPLAY RACK FREE WITH ORDER FOR 12 ASSORTED

**Jenkins Vulcan Spring Co.**

Saint Louis, Mo. - 1402 Chestnut St.
Minneapolis, Minn. - 1024 Hennepin Ave
Reading, Pa. - - 538 Franklin St.
Forth Worth, Tex. - 708 Commerce St.
Sumter, S. C. - - 29 Caldwell St.

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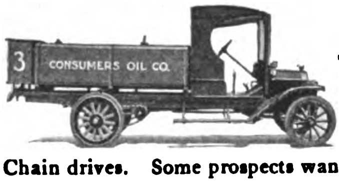
3 CONSUMERS OIL CO.

# Sell ALL Your Prospects

Sell the Tonford. Meets demands for internal Gear and Chain drives. Some prospects want one—some another.

## TONFORD

Chain Drive **$350**

Internal Gear Drive **$390**

The Tonford has been in use for more than a year. Thousands of owners attest its strength—serviceability—reliability. The Tonford attracts *quality* dealers because of its reputation for quality, unequaled at anywhere near the price.

**Make us prove it. Write today—*now*—for Tonford information.**

MANUFACTURED BY THE

**DETROIT TRUCK CO. - - - Detroit, Mich.**

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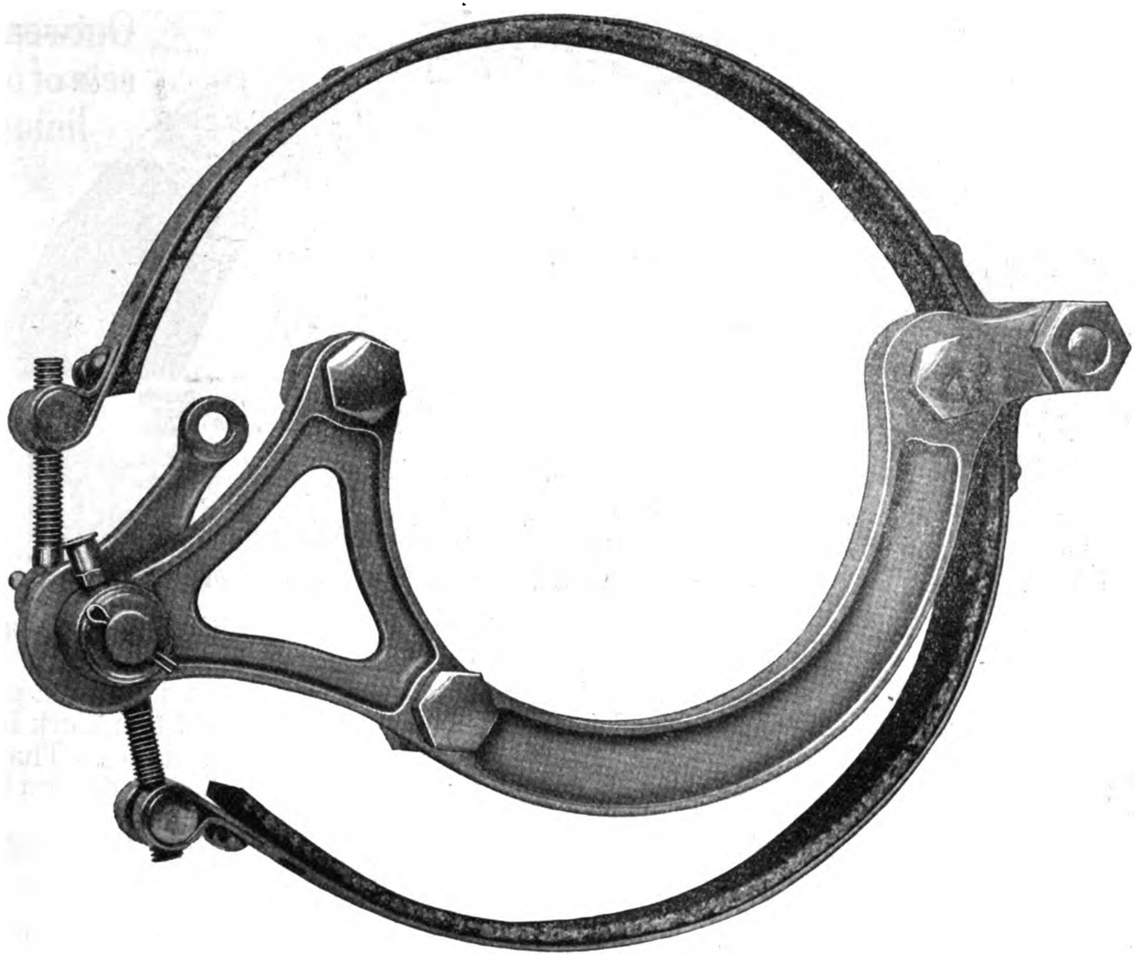
# The MANLEY GARAGE AND SHOP EQUIPMENT

Every garageman and repairman should get our catalog. You'll find in it just the time and labor savers you need, and their prices will astonish you by their moderateness.

*Send for your copy of this catalog today*

THE UNITED ENGINE & MFG. CO.
Hanover, Pa.



HOLFORD BRAKES
SAFETY FIRST

# The Perfect, Practical, Positive Brake For Ford Cars

**NOT ONLY MAKES YOU FEEL SAFE, BUT ASSURES YOUR SAFETY**

**HOLDFORD BRAKES** are high-grade external contracting brakes for Ford cars, which can be easily and quickly installed to act from the hand lever as emergency brakes, or from the foot pedal as service brakes. Designed in accordance with the best engineering practice; the band and brace are of steel, the toggle crank and bracket are drop forgings and the lining J-M non-burn. Do not drag when released, no readjustment for wear is necessary and oiling is easy.

The brake usually supplied with this car cannot be depended upon in that "tight corner" or "on the hill." The hand brake wears out quickly and allows the car to creep when being cranked. The constant use of the foot brake quickly wears out the transmission. As the foot brake operates from the drive shaft any accident to the axle or the stripping of gears might mean a serious accident.

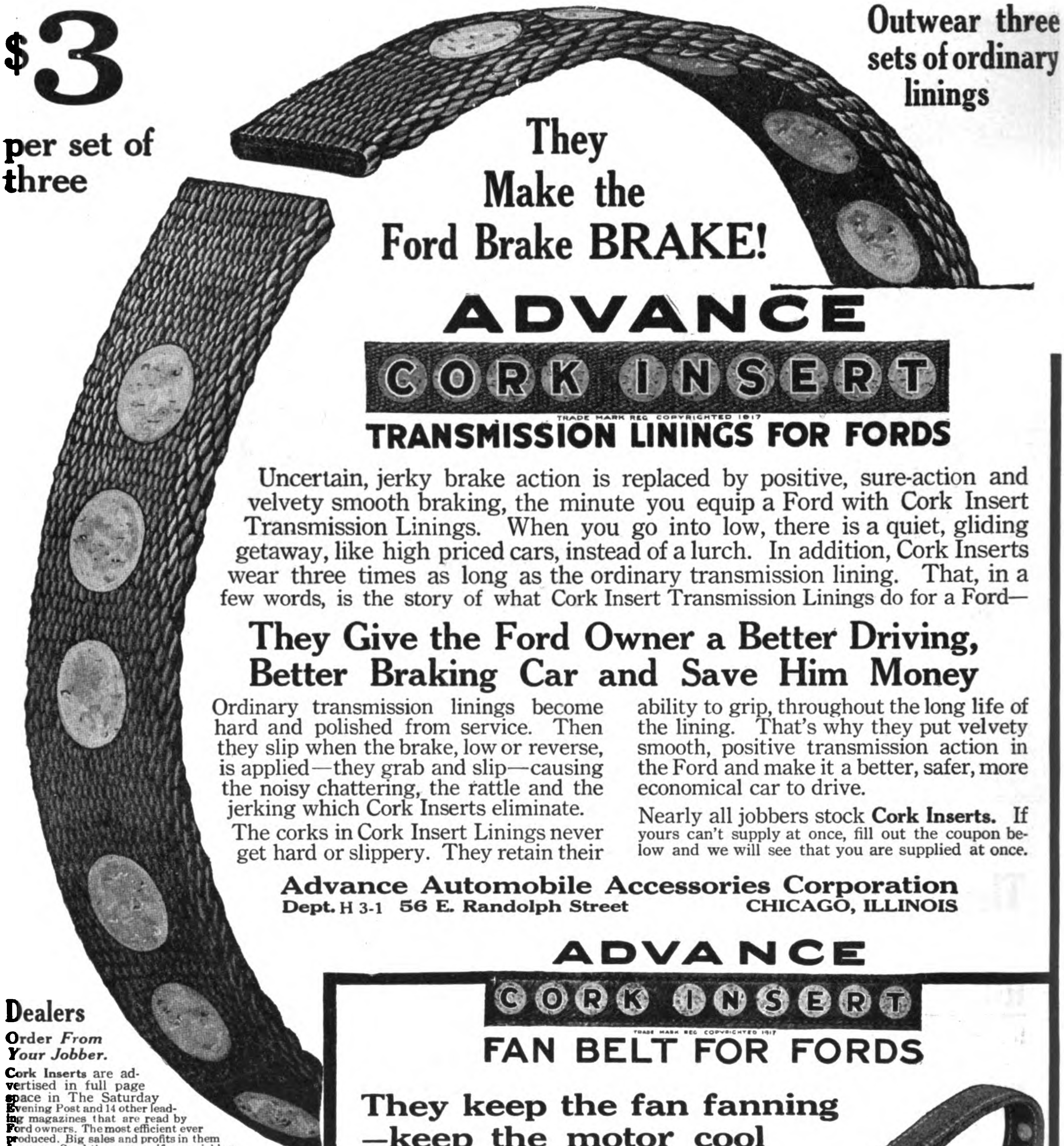
**HOLDFORD BRAKES** save wear and tear and will be attached by the wise owner on his pleasure car, delivery car or truck. They will positively stop a Ford with locked wheels on *any grade, at any speed, with any load.* Not necessary to remove old brakes. (When ordering state whether hand or foot brakes are wanted).

**THE G. H. DYER COMPANY, - - - Cambridge, Mass.**

**$3**

**per set of three**

**Outwear three sets of ordinary linings**



## They Make the Ford Brake BRAKE!

## ADVANCE CORK INSERT

TRADE MARK REG. COPYRIGHTED 1917

## TRANSMISSION LININGS FOR FORDS

Uncertain, jerky brake action is replaced by positive, sure-action and velvety smooth braking, the minute you equip a Ford with Cork Insert Transmission Linings. When you go into low, there is a quiet, gliding getaway, like high priced cars, instead of a lurch. In addition, Cork Inserts wear three times as long as the ordinary transmission lining. That, in a few words, is the story of what Cork Insert Transmission Linings do for a Ford—

### They Give the Ford Owner a Better Driving, Better Braking Car and Save Him Money

Ordinary transmission linings become hard and polished from service. Then they slip when the brake, low or reverse, is applied—they grab and slip—causing the noisy chattering, the rattle and the jerking which Cork Inserts eliminate.

The corks in Cork Insert Linings never get hard or slippery. They retain their ability to grip, throughout the long life of the lining. That's why they put velvety smooth, positive transmission action in the Ford and make it a better, safer, more economical car to drive.

Nearly all jobbers stock **Cork Inserts.** If yours can't supply at once, fill out the coupon below and we will see that you are supplied at once.

**Advance Automobile Accessories Corporation**
**Dept. H 3-1 56 E. Randolph Street CHICAGO, ILLINOIS**

**Dealers**
***Order From Your Jobber.***

**Cork Inserts** are advertised in full page space in The Saturday Evening Post and 14 other leading magazines that are read by Ford owners. The most efficient ever produced. Big sales and profits in them for you. Send the coupon if your jobber can't supply you at once.

**Check and Mail Today**

**Advance Automobile Accessories Corp.**
**Dept. H 3-1 56 East Randolph St., Chicago**

[ ] Send one dozen sets of Advance Cork Insert Transmission Linings for Fords.
[ ] Send one dozen Advance Cork Insert Fan Belts, 1917 Ford.
[ ] Send one dozen Advance Cork Insert Fan Belts, 1916 or earlier model Ford.
[Regular dealer discounts to apply.]

Name..........

City.......... State..........

Jobber's Name..........

## ADVANCE CORK INSERT

TRADE MARK REG. COPYRIGHTED 1917

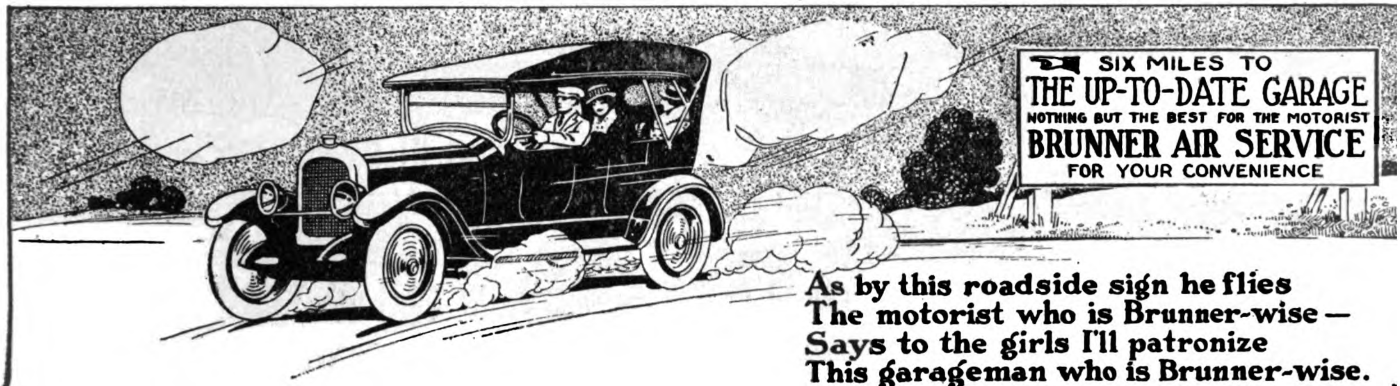
## FAN BELT FOR FORDS

### They keep the fan fanning —keep the motor cool —they don't slip

Most motor trouble is caused by overheating. Overheating would largely be avoided if the fan were kept fanning, by a belt that didn't slip. The slippage of the ordinary fan belt runs as high as 25% to 50%.

Cork Insert Fan Belts make the fan turn with the engine, because the slip is reduced to the minimum. The corks are not affected by water or oil, grease or dirt. They retain their gripping qualities throughout the exceedingly long life of the belt. They outwear several ordinary fan belts. Nothing else to equal it ever has been produced. Order direct if your jobber hasn't **Cork Insert Fan Belts,** mentioning his name, and we will see that you are supplied.

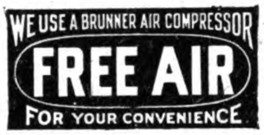
**$1 for 1917 Ford—1916 and earlier models, 85c.**



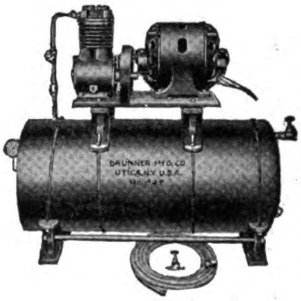
**As by this roadside sign he flies
The motorist who is Brunner-wise—
Says to the girls I'll patronize
This garageman who is Brunner-wise.**

MR. GARAGEMAN, is your garage up-to-date? Are the Brunnerwise Motorists spending their money with you, or are they spending their money with the Brunnerwise Garageman down the line aways who advertises the fact that he is supplying prompt and efficient service by displaying the Brunner sign on his garage?

If your business is not so large but that you could handle some more, Mr. Garageman, you should investigate Brunner service.


WE USE A BRUNNER AIR COMPRESSOR
FREE AIR
FOR YOUR CONVENIENCE

**The Brunnerwise Motorist is a most discriminating individual; he appreciates good service and he knows prompt and efficient service always awaits him at the door of the garage displaying the Brunner sign. He is a liberal spender and spends his money with the Brunnerwise Garagemen who show him that they have his interests in mind by installing Brunner service.**



**The Brunnerwise Garageman is reaping the benefit of the good advertising derived from the Brunner Sign, for his garage is the stopping place of the Brunnerwise Motorist who always patronizes the garage displaying the Brunner sign, because he knows he can depend on real service when he stops to trade with the Brunnerwise Garageman. Are you Brunnerwise?**

# INVESTIGATE THE BRUNNER AIR COMPRESSOR

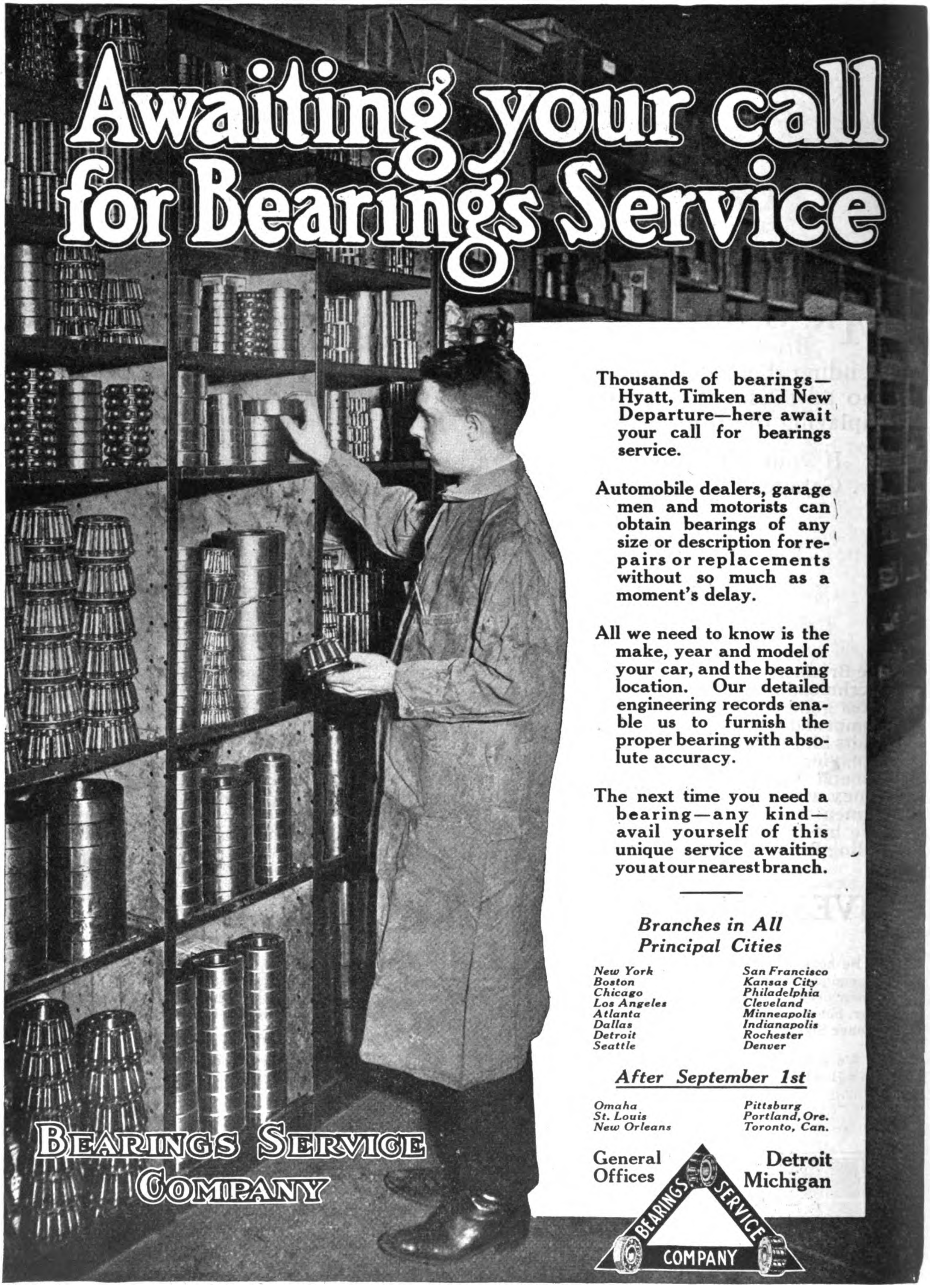
**Be honest with yourself and investigate the garage air compressor question thoroughly before deciding on your new equipment. The Brunner will stand investigation and the more thorough the investigation the more certain will be your decision in favor of Brunner Service, because it not only insures compressed air efficiency of the very highest order, but it also insures that very desirable and liberal patronage of the Brunnerwise Motorist, which follows the Brunner Sign.**

**We will be glad to send you the name of the Brunner Jobber who covers your town, also our catalogue and Garageman's Handbook on Compressed Air—a book which every garageman should read carefully. They are all free for the asking.**

## BRUNNER MANUFACTURING COMPANY

**Main Office and Plant:
UTICA, N. Y.**

**Cincinnati Branch:
CINCINNATI, OHIO.**



Thousands of bearings—Hyatt, Timken and New Departure—here await your call for bearings service.

Automobile dealers, garage men and motorists can obtain bearings of any size or description for repairs or replacements without so much as a moment's delay.

All we need to know is the make, year and model of your car, and the bearing location. Our detailed engineering records enable us to furnish the proper bearing with absolute accuracy.

The next time you need a bearing—any kind—avail yourself of this unique service awaiting you at our nearest branch.

***Branches in All Principal Cities***

| | |
|---|---|
| *New York* | *San Francisco* |
| *Boston* | *Kansas City* |
| *Chicago* | *Philadelphia* |
| *Los Angeles* | *Cleveland* |
| *Atlanta* | *Minneapolis* |
| *Dallas* | *Indianapolis* |
| *Detroit* | *Rochester* |
| *Seattle* | *Denver* |

***After September 1st***

| | |
|---|---|
| *Omaha* | *Pittsburg* |
| *St. Louis* | *Portland, Ore.* |
| *New Orleans* | *Toronto, Can.* |

General Offices Detroit Michigan

# AC VICTORIES

## "A-C Again Breaks 24 Hour Record"

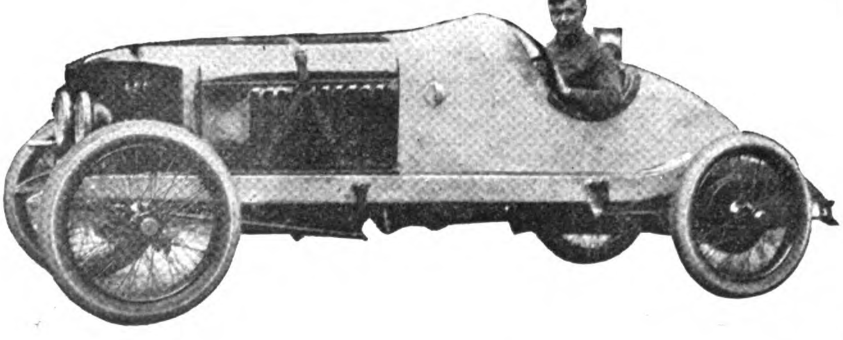
Joe Dawson, in a Chalmers stock chassis equipped with A-C plugs, covers 1898 miles in 24 hours, averaging 79.08 miles per hour.

It is interesting to note that A-C plugs are standard equipment on all Chalmers cars, so that every Chalmers owner and every owner of a car equipped with A-C is assured of maximum spark plug efficiency.

Look under your hood, and if the plugs do not have the letters "A-C" on the porcelain, get a set from your dealer. You will be more than repaid by the improved performance.

**AC** *The Standard Spark Plug of America*

**Champion Ignition Company, Flint, Michigan**



# 1917 SALES

# FOREIGN BUSINESS $90,958,243.00

From National Automobile Chamber of Commerce,
7 East 42nd Street, New York, August 27, 1917

## *Embargoes Affect Motor Car Exports*

**Thirty-five Per Cent. Decrease in Shipments to Great Britain, France and Russia During Last Fiscal Year—Big Increases to All Other Countries—Shipments Total 80,811 Cars, Valued at $90,958,243—Thirty-three Hundred More Vehicles Exported, But Aggregate Value is $6,507,000 Less—Fewer Trucks and More Passenger Cars.**

Figures just issued by the Department of Commerce show that during the 12 months ended June 30, 1917, the United States exported 80,811 automobiles and motor trucks, valued at $90,958,243, as compared with 77,499 cars, valued at $97,465,811 during the preceding fiscal year.

Analyzing the official figures, the National Automobile Chamber of Commerce finds that the increase in number of cars exported is due to the larger shipments to most countries outside of Europe, which more than offset the decreases in exports to Great Britain, France and Russia, due to import prohibitions and lack of shipping facilities.

The fact that the aggregate value of exports during the last fiscal year was less by $6,507,000 than in the preceding year, while the actual number of vehicles exported was greater by 3312, is due to decreased shipments of trucks for war purposes, the average value of which is much higher than the average value of passenger cars exported to countries outside of Europe.

Exports of commercial vehicles and passenger cars during the two years were as follows:

| | 1916 | | 1917 | |
|---|---|---|---|---|
| | No. | Value | No. | Value |
| Commercial.... | 21,265 | $56,805,548 | 15,977 | $42,337,315 |
| Passenger...... | 56,234 | 40,660,263 | 64,834 | 48,620,928 |

Thus, while the number of trucks exported fell off 5288 in the year and their aggregate value was $14,468,233 less, the shipments of passenger cars increased by 8600 and their value by $7,960,665.

Great Britain and France were still our largest markets, despite their heavy falling off in purchases. The former bought $18,508,442 worth last year, mostly trucks, as against $26,147,232 worth in the previous fiscal year. France's imports were nearly all trucks and amounted to $14,691,460, as compared with $19,137,904 in the 12 months ended June 30, 1916.

Owing to shipping difficulties and internal political troubles, Russia's imports fell from a value of $15,686,874 in 1916 to $6,371,982 in the last fiscal year.

Exports to the rest of Europe combined increased remarkably, when it is remembered that no shipments went to the central empires. The increase amounted to more than $1,000,000 in the year, accounted for largely by exports to the Scandinavian countries, Holland and Spain. Europe as a whole took slightly less than one-third by valuation of the total American exports.

Aside from the European countries, Canada is America's best customer for motor cars, having increased her purchases by nearly $4,200,000—from $7,280,151 in 1916 to $12,088,787 in 1917.

Next comes Asia and Oceania, with imports of 9716 cars, valued at $10,093,720 last year—an increase of $1,450,927. Australia follows, with 5000, valued at $4,213,874. The British East Indies increased their purchases from $2,307,739 to $3,617,351.

In the Americas, after Canada, the West Indies were our best market for automobiles, to the extent of $4,072,647—an increase of $1,248,735 over the year before.

The most remarkable increases, however, are shown by Mexico and the South American republics. Mexico's commercial recovery is reflected by an increase from $409,700 to $1,833,975 in the year. Argentina's imports reached nearly $2,500,000. Brazil's trebled. Chile's prosperity from her nitrate mines resulted in an increase from $576,777 to $1,982,538. The rest of South America took automobiles to the value of $1,804,827, as against only $698,911 the year before.

In addition to automobiles the United States exported in the last fiscal year 23,435 automobile engines, valued at $2,844,406; tires worth $12,330,201 and parts worth $27,284,932.

This makes a grand total of $133,417,782 of foreign automobile business done by the country last year, which means a lot of money in the pockets of American workingmen.

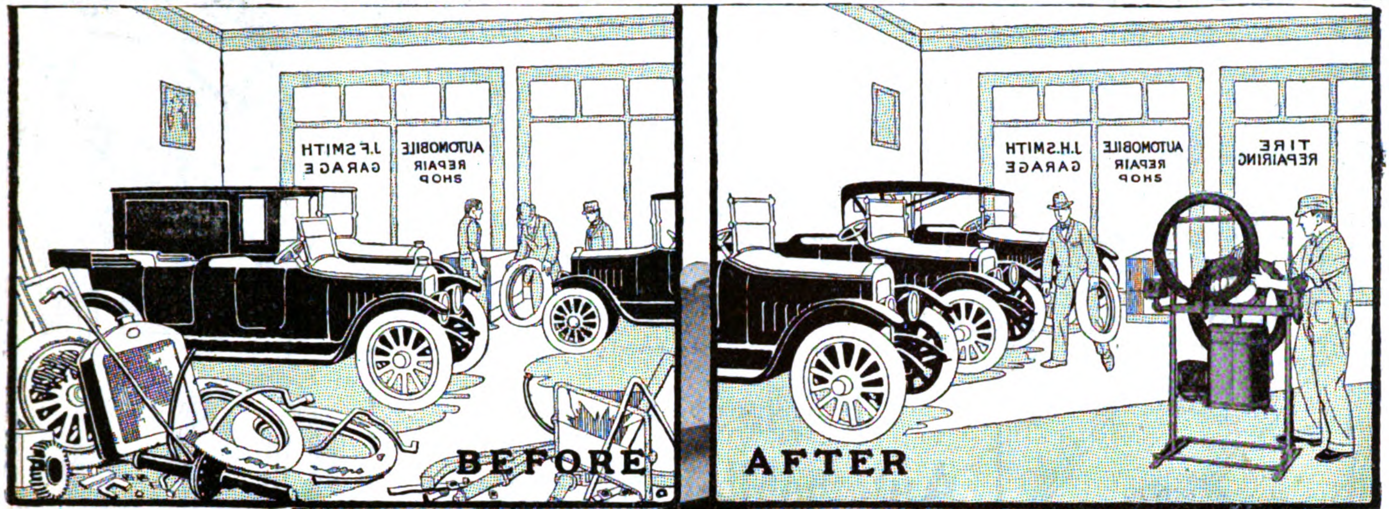
***If you are a member of the Foreign Trade Bureau conducted by the Automobile Journal Publishing Company you can reach 8,000 foreign buyers of pleasure cars, trucks, fittings, supplies, accessories, tools and equipment in more than 81 foreign countries.***

ALL FACTS AT REQUEST

**Automobile Journal Publishing Company**

**TIMES BUILDING** **PAWTUCKET, R. I.**

# WHAT GOOD IS JUNK ANYWAY?



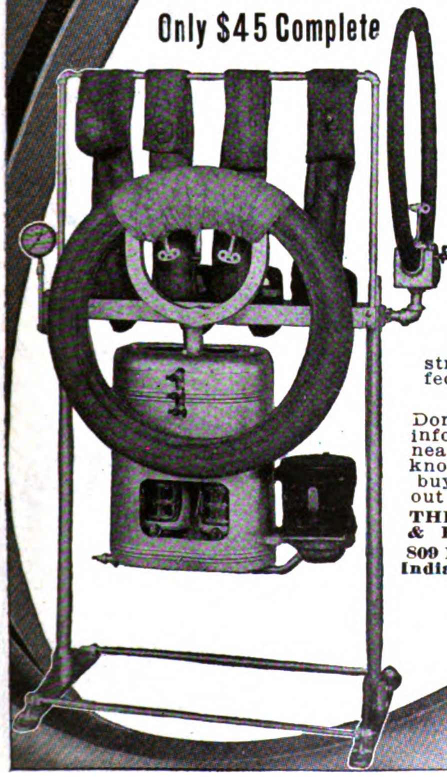
Do you pay rent on the space junk occupies? Better a thousand times to sell the metal for old iron—the rubber for old rubber—and utilize the space to produce dollars.

To be efficient—to make profit—you must use every facility at your command. You cannot waste space any more than you waste your time—it's all money. Better turn the junk into cash and get one of

## HAYWOOD'S Model D.B. VULCANIZING PLANTS

The plant will earn every dollar it costs almost any week—every week, if you have the right push and energy. Every customer whose car you now store will let you repair his tires—keep them in order to increase the mileage 25% to 50%. Could you want a better opportunity? Men are getting rich in the garage business, who understand the game—who permit no leakage—no waste of space—who use every bit of energy for dollar making. Why shouldn't you? Every owner who has tried it thought he had no room, but there **was** room, and more money in his business, which we helped him to find

**Only $45 Complete**



## A WONDERFUL PLANT

This Model D-B Vulcanizing Plant is small, compact, especially designed for garages. It will handle almost any kind of repair on casings or tubes.

### THE PRICE IS LOW

The price is extremely low—only $45. It is convenient — quick — positive — certain and will earn more money than any other thing you can put in its space.

### THE PROFITS BIG

There is almost no limit to the profits—it all depends upon the time you can give it—we teach you the whole business when you buy a machine. Its operation is simplicity itself—anyone can operate it without any special training—our splendid book of instructions makes it all perfectly plain and clear.

### WRITE TODAY

Don't put it off—get complete information and name of our nearest jobber. You should know about it, whether you buy a plant or not. Fill out the coupon.

**THE HAYWOOD TIRE & EQUIPMENT CO.**
**809 N. Capitol Ave.**
**Indianapolis, Ind.**

**A BUSINESS OPPORTUNITY COUPON**

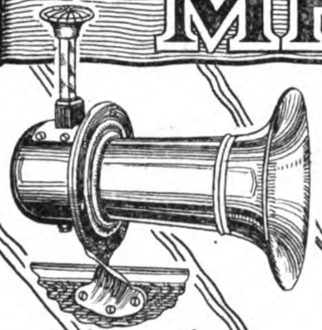
**Mr. M. Haywood, Personal,**
**809 N. Capitol Ave., Indianapolis, Ind.**

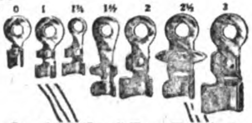
Dear Sir:—Please send full details of the Haywood Model D-B Vulcanizing Plant.

Name..............................

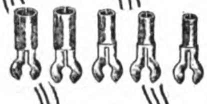
Address..............................

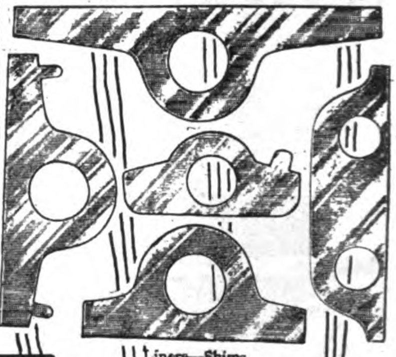
# FITZGERALD MFG CO.

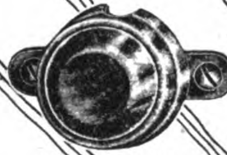

Clero Hand Horn

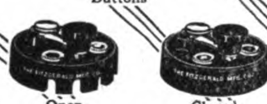


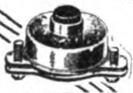
Standard "Lug" Type Terminals

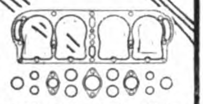

Slip Snap Terminals

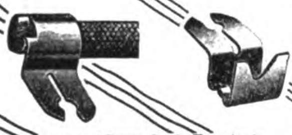

Liners—Shims

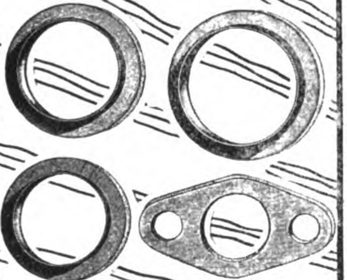

Clero Electric Push Buttons


Open Closed
Two Point Hard Rubber Switches


Clero Electric Push Buttons


Gasket Sets For Ford Cars


Copper and Brass Cable Terminals



## Highest Grade Automobile Specialties

**Made to perfected designs, of finest material, proven by service and sold with a guarantee of unequalled quality.**

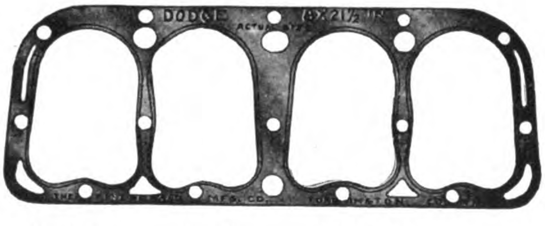
Fitzgerald products are the standard of the automobile industry. They are the results of intensive specialization. That's why they are superior to all others.

Our resources and manufacturing facilities insure such production that, despite this quality, prices are lower than those of competitors.

We can supply any demand and make deliveries to schedule.

### COPPER-ASBESTOS GASKETS

Are made for a number of light cars, including



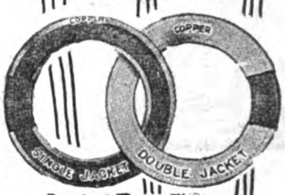
| | | |
|---|---|---|
| *Dodge* | *Ford* | *Chevrolet* |
| *Maxwell* | *Vim* | *Enger* |
| *Oakland* | *Monroe* | *(75) Overland (83)* |

and are carried as stock. Others are made to order. We manufacture practically anything in sheet metal to specification and to the Fitzgerald standard of quality.

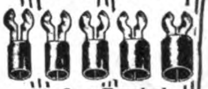
***Let us quote you prices. They will mean profits, no matter how large or small the order***

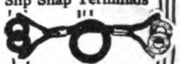
**FITZGERALD MFG. CO.**

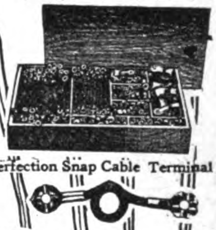
**Torrington** **Connecticut**

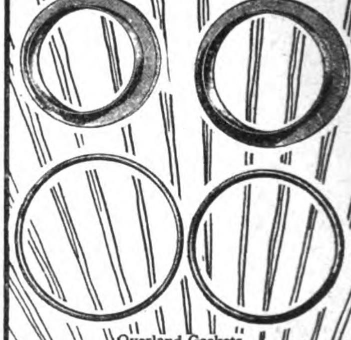


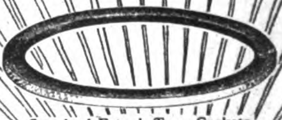
Standard Flange Fittings

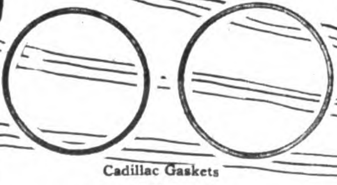

Slip Snap Terminals

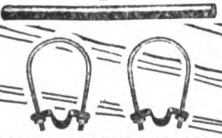

Perfection Spring Battery Con.

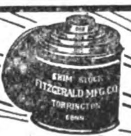

Perfection Snap Cable Terminal


Overland Gaskets

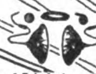

Standard French Type Gaskets

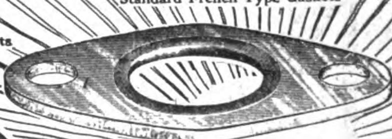

Cadillac Gaskets

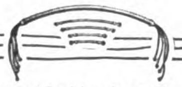

Steering Post Attachments



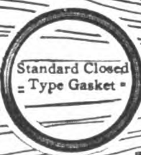
Shim Stock

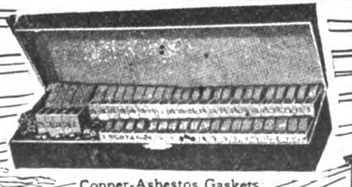

Ford Lighting Outfits

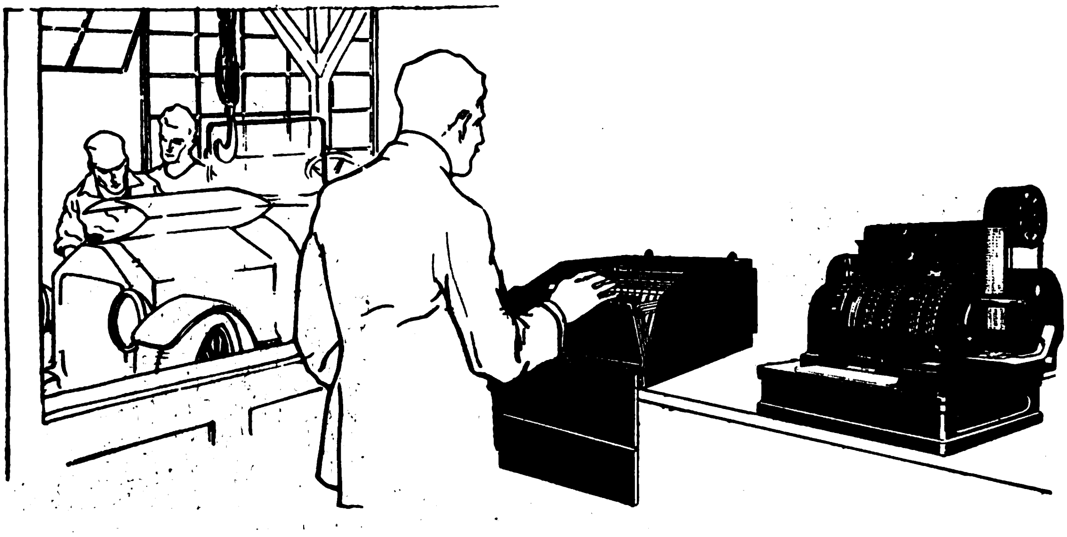

Flange Exhaust Gaskets


Ford Ignition Assembly

Spark Plug Gaskets Carried in Stock


Standard Closed Type Gasket


Copper-Asbestos Gaskets



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Greatest labor-saving machine for garages and service stations.

It does 15 things in three seconds.

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It does quickly what helpers can't do.

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Please send me full particulars of your latest model cash register and the new N. C. R. credit file.

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**Get the benefit of these prosperous times.** **Cut out this coupon and mail it today.**

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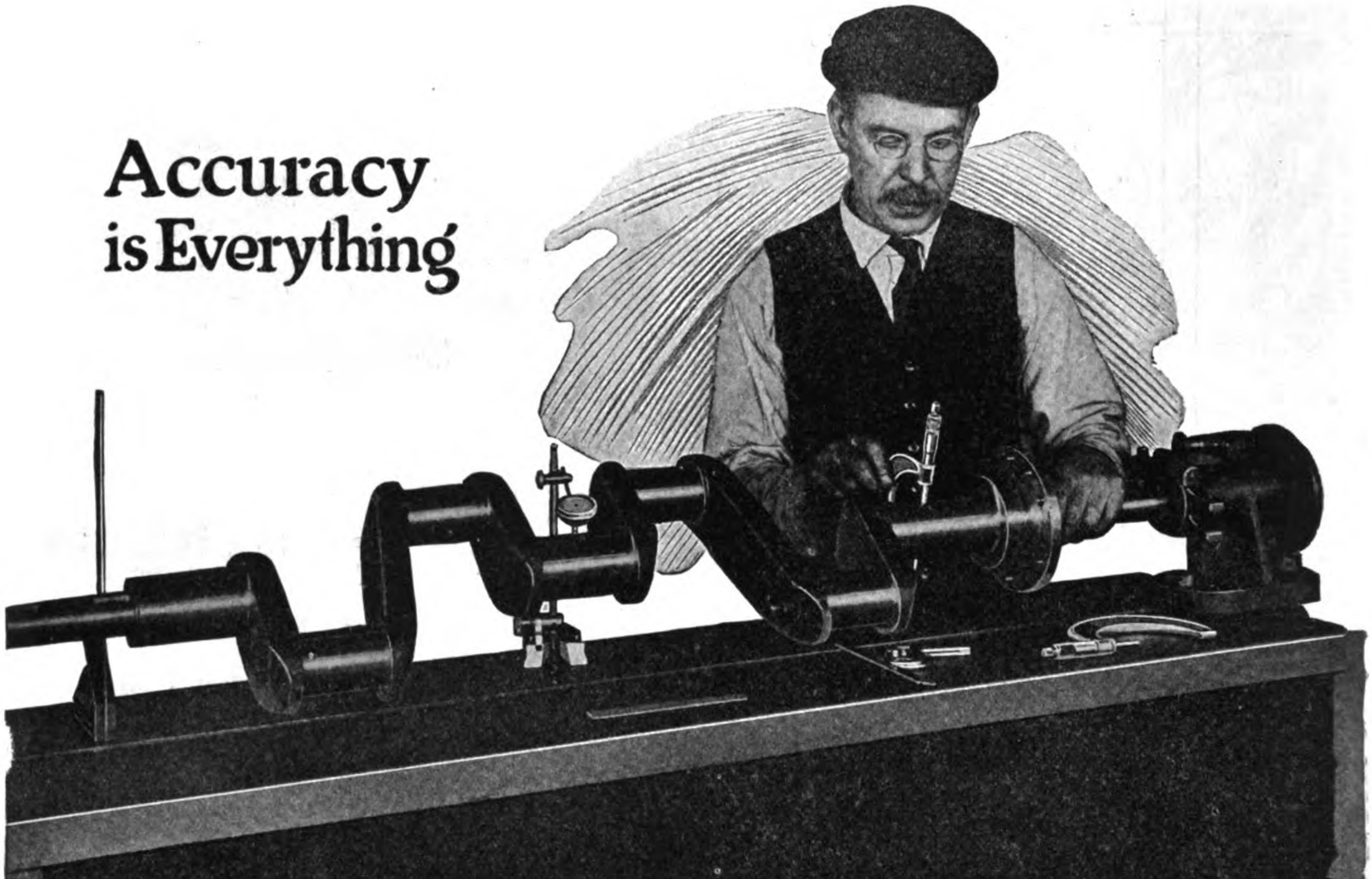
# Accuracy is Everything



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The same demands that are now filling our factories with orders are taking away the very men who could do the work. But now, as before, accuracy is everything, quality is more in demand than ever.

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The ACCESSORY and GARAGE JOURNAL
Devoted Exclusively to the Automobile Trade and Allied Interests.

VOL. VII. PAWTUCKET, R. I., AUGUST 1917 No. 4

# *Federal Suit Against Accessory Jobbers*

## Government Brings Action Charging Conspiracy in Restraint of Trade—Grand Jury Indicts Commissioner Webster, 20 Other Individuals and 16 Prominent Accessory Manufacturing Concerns

William M. Webster, commissioner of the National Association of Automobile Accessory Jobbers, 20 other individuals and 16 prominent accessory concerns, members or associate members of the association, are charged with conspiring to restrain trade in a Federal indictment handed to Judge Julius M. Mayer by the Federal grand jury in New York. Henry A. Guiler and Robert W. Joyce, assistant United States attorneys, who brought the case, were granted bench warrants for all the defendants living outside the jurisdiction of the court.

It is understood that the Federal attorneys have been working up their case for over a month and that the charges date back to the formation of the association at a meeting in the Union League Club of Chicago, May 11, 1915, and cover points up to the present date. The indictment also covers one meeting of the organization at the Hotel Astor in New York, at which, it is alleged, a resolution was passed, condemning the granting of special discounts by jobbers to certain dealers.

It is further charged that a list of "eligible or legitimate jobbers" was issued by the association for the purpose of discrimination. The indictment also alleges that accessories were sold to jobbers at 40 per cent. below list prices, with the understanding that if they disposed in the goods below certain fixed prices they would be ineligible to further membership in the association and the government's contention on this point is that a jobber violating this understanding would be unable to secure further supplies of accessories.

The individuals and concerns indicted are:

William M. Webster, commissioner of the National Association of Automobile Accessory Jobbers, Chicago; Fred Campbell, St. Louis; J. Stanley Clemence, Portland, Ore.; George E. Edmunds, Detroit; Sidney B. Dean, St. Paul, Minn.; Edward C. Graham, Washington; F. Hallett Lovell, Jr., Newark, N. J.; Willard W. Low, Chicago; Richard H. Englehart, Davenport, Ia.; William K. Norris, St. Louis, Harry R. Williams, Indianapolis; Fordyce B. Caswell, Toledo, O.; Thomas M. Brooks, Chicago; Charles E. Faeth, Kansas City, Mo.; Grant F. Discher, Milwaukee; Sidney F. Beech, Chicago; William L. Ferrier, St. Louis; Henry P. Andrae, Milwaukee; William Sparks, Jackson, Mich.; Emil Grossman, Brooklyn and Arthur M. Moody, Boston.

The concerns named are the Fred Campbell Auto Supply Company, St. Louis; Ballou and Wright, Portland, Ore.; Edmunds and Jones Corporation, Detroit; Nicols, Dean and Gregg, Inc., St. Paul; Electric Appliance Company, Chicago; Sieg Company, Davenport, Ia.; McQuay-Norris Manufacturing Company, St. Louis; Gibson Company, Indianapolis; the Champion Spark Plug Company, Toledo; Automobile Supply Company, Chicago; Motor and Machinists' Supply Company, Kansas City; Gemco Manufacturing Company, Milwaukee; Motor Car Supply Company, Chicago; Julius Andrae and Sons Company, Milwaukee; Sparks-Withington Company, Jackson, Mich.; Emil Grossman Manufacturing Company, Brooklyn, and the Wetmore-Savage Company, Boston.

### GENERAL MOTORS EARNINGS ESTIMATED AT $30,000,000.

The earnings of the General Motors Co. for the fiscal year ending Aug. 31 are estimated at $30,000,000. After providing for a six per cent. dividend on the preferred stock the balance will be equal to about 35 per cent. on the $82,600,000 common stock.

The board of directors at a recent meeting elected the following officers: President, W. C. Durant; chairman of the board, Pierre S. Du Pont; vice presidents, A. G. Bishop, W. P. Chrysler, R. H. Collins, W. L. Day, C. S. Mott, E. Ver Linden and F. W. Warner; secretary, T. S. Merrill; treasurer, H. H. Rice; controller, W. L. Prensky. The finance committee is composed of L. G. Kaufman, Pierre S. Du Pont, W. C. Durant, J. H. McClement and J. J. Raskob.

### FEDERAL RUBBER WORKERS SUBSCRIBE TO STOCK.

The Federal Rubber Co., Cudahy, Wis., has arranged a plan through which its employees may acquire a certain amount of the second preferred stock. The stock is dividend bearing and as there is only a limited number of shares available, it is being offered first to those employees holding positions of responsibility and whose terms of service with the Federal company cover a considerable period of time.

### RUMOR OF BIG MERGER TO INCLUDE PREST-O-LITE.

It is rumored in financial circles in New York and Chicago that a merger to include the Union Carbide Co., the Prest-O-Lite Co. and the New York Air Reduction Co., is being negotiated. All three companies are engaged in lines that are closely allied. It is reported that the combination will be accomplished through a reorganization and reincorporation of the Union Carbide Co. to include the other two companies.

### LOCOMOBILE BUILDS NEW FACTORY.

The Locomobile Company of America, Bridgeport, Conn., is planning the erection of another large factory building on the east side of Main street, near its present big plant. Plans for the building are complete and work will start immediately. The structure will be of brick and steel.

# *Government Favors Conservation of Gasoline*

### Garagemen and Motorists Shown How to "Do Their Bit" Toward Winning the War.

The Massachusetts Committee on Public Safety has made public a dispatch from the Council of National Defense in which motorists are advised to economize in the use of gasoline, although it does not recommend that they lay up their cars.

The dispatch contained the findings of Van H. Manning, director of the Bureau of Mines of the Department of the Interior, and are presented in the form of recommendations based on the results of a careful investigation that he has recently completed into the situation.

Recommendations for the use of cars, as embodied in the dispatch, was as follows:

"One-half of the gasoline in the United States, 1,250,000,000 gallons, is used for pleasure riding.

"It is estimated that the United States army will need 350,000,000 gallons for airplanes, trucks, automobile tractors and other machines. There is no way of obtaining that supply in this country except by saving it from the existing supply, and this economy may be effected by voluntary cutting down of pleasure riding—for instance, the man who takes his family out on Sunday for a 50-mile ride can cut that ride in half.

"It has been estimated that by economical use enough gasoline can be saved to supply not only the United States, but also its Allies for war purposes.

"The following suggestions should be observed by automobile owners:

"1. Do not allow your gasoline engine to run idle.

"2. Use kerosene, not gasoline, for cleaning purposes in the garage.

"3. See to it that the carburetors do not leak. Form the habit of shutting off the gasoline at the tank.

"4. By judicious regulation of the mixture of gasoline and air in the motor, both greater power and economy of fuel may be obtained.

"Automobile owners need not lay up cars, but should use them, either for trade or pleasure purposes, thoughtfully and judiciously. If this advice is followed there will be no undue scarcity, for the United States possesses an abundant supply for ordinary purposes."

The National Automobile Chamber of Commerce has also issued a bulletin in support of this movement urging that gasoline should be economized and waste avoided. It is distinctly stated that the supply is adequate for all purposes, and with the use of good judgment and cooperation no such a thing as a drought of fuel for motor vehicles should be experienced.

### "HYATT ROLLER" ON THE PACIFIC COAST.

The "Hyatt Roller," the test car sent out on a 15,000-mile trip by the Hyatt Roller Bearing Co., has reached Seattle, Wash., with several thousand additional miles added to its world's record of 261,800 miles, which it held when leaving Detroit on June 4. The car is still traveling on its original Hyatt bearings, which were installed nine years ago when it was built. Albert A. Dryden, the driver, says: "I have driven the Hyatt Roller" over 80,000 miles, during which time the bearings have neither required adjustment or replacement. In fact, during the entire period of their service they have never received any attention except occasional oiling." The car after leaving Detroit on its swing around the country traveled eastward to New York City, westward to Los Angeles, thence northward along the Pacific coast to Seattle.

# *Winton Co. Planning to Celebrate 20th Birthday*

### Will Mark Delivery Anniversary of the First Regular Output of American Made Cars.

The Winton Company, Cleveland, O., makers of the Winton car, is seeking suggestions for a fitting celebration to be held next April to commemorate the 20th anniversary of the delivery of the first regular output of American made cars.

April 1, 1898, the Winton company began delivery of the first output of American cars, delivering 21 cars that year. The next year, 1899, 102 Wintons were delivered, including 11 trucks. Of the total of 123 cars sold in the two years, 32 went into New York state; 32 to Pennsylvania; 11 to New Jersey; nine to Ohio; seven to Connecticut; six to Illinois; five to Ontario; four to Indiana; three to Massachusetts and 14 scattering. Among the prominent pioneer motorists who purchased Winton cars during 1898 and 1899 were William Rockerfeller, Harry Payne Whitney, Lawrence Waterbury, Larz Anderson, J. W. Packard, J. M. Studebaker, Henry Rogers Winthrop, C. Gray Dinsmore, Geo. W. Childs Drexel, Albert C. Bostwick, Josiah Stanford and H. K. Browning.

Not having set on any definite plans the company invites readers to suggest an appropriate celebration.

### INDIAN WAR ATLAS ISSUED.

The Indian Refining Company, New York, manufacturers of Havoline oils and greases, are distributing a pocket size "Atlas of the World War," which was published by the Rand McNally Co. In addition to 18 colored maps the Atlas also contains President Wilson's address to Congress calling for war, pictures of war interest and lubricating charts.

# *Precision Casting Secures Western Plant*

### Purchase of the Republic Brass and Bronze Company at Pontiac, Mich., Important Move.

The Precision Die Casting Co., Syracuse, N. Y., has purchased the Republic Brass and Bronze Co., Pontiac, Mich., makers of bronze, brass and aluminum castings. Die casting equipment will be moved from the Syracuse plant to Pontiac and a line of sand castings will also be added to the products of the Pontiac company, which will enable the Precision company to handle its western business from that city.

An additional factory building 150x60 feet will be added to the Pontiac plant to house the extra equipment that will be installed and to provide additional room for expansion. Charles L. Ackerson, formerly manager of the Syracuse Aluminum and Bronze Co., will manage the Pontiac branch of the business.

### PREST-O-LITE BRANCH GIVES MOTORISTS NOVEL SERVICE.

When the new state motor code went into effect in California, requiring that headlights on all motor vehicles be permanently adjusted so that their shaft of light will not project more than 42 inches above the ground at a distance of 75 feet or more in front of the vehicle, V. T. Combs, Pacific coast manager of the Prest-O-Lite Co., Inc., announced to Los Angeles motorists through the newspapers, that the Prest-O-Lite Battery Service Station would adjust and test headlights free of charge.

The law provides that all lamps must be tested under the supervision of the police department, which then approves the tests and issues adjustment certificates. A force of adjusters was arraigned for by Mr. Combs and police officers were on hand to issue certificates. Tests were held in the new Prest-O-Lite branch building. Two continuous lines of automobiles poured through the double-doored entrance, drew up to a 75-foot line, had their lights adjusted and certified and went out of another exit. Over 200 pair of headlights were adjusted between 7:30 to midnight the first evening. The waiting line on the second night was nine blocks long and on the third night, 12 blocks long.

Mr. Combs arose to the occasion presented for business and as each motorist passed out of the building he was invited to return for Prest-O-Lite battery service and his attention was called to the excellent facilities provided by the branch. A Prest-O-Lite battery testing and service card was handed to each motorist as a parting invitation to avail himself of the service.

## Reorganized Plan for Emerson Motors

**Physical Assets of the Company Were Recently Appraised at $640,197.**

A meeting of the stockholders of the Emerson Motors Company has been called to secure their authorization of the sale of the assets of the company, which will be reorganized. The company will issue $1,000,000 six per cent. cumulative first preferred stock and $113,700 non-cumulative second preferred and $2,377,789 in common stock, all of a par value of $10 a share. The new capitalization totals $3,491,489, while there is now outstanding $2,718,883, including $2,377,388 common stock and $341,095 preferred. The physical assets of the company were recently appraised at $640,197.

Under the reorganization plan stockholders are to pay 30 cents a share for each share owned of common and preferred, for which they will receive at par first preferred stock in the new company to the extent of one-third of their present holdings, either common or preferred.

Second preferred or common stock of the new company will be given to those who do not subscribe to the plan. Deposits of stock under the plan may be made up to Oct. 1.

### HOOD SERVICE BUREAU CHANGES AND EXPANSION.

The Wallace C. Hood Service Bureau, Detroit, now becomes a close corporation. The stock formerly owned by L. W. Swords was recently purchased by Frank M. Eldredge, secretary and treasurer of the corporation. Mr. Swords has retired from the bureau.

Wallace C. Hood, president of the bureau bearing his name, started the business about 18 months ago. The basic idea was acting as Detroit representative for automobile and accessory dealers located outside of Detroit. The plan has worked out splendidly, as the bureau is carrying the accounts of many big distributors and manufacturers and some in Detroit itself.

Within the past six months the Hood bureau saw the big possibilities in marketing factory outputs and now control the distribution throughout the United States and foreign countries of the following: Tu Ford Valve Tools for Ford and Chevrolet cars, Retlaw Gasoline Gauges for Fords, Dim a Ford Switches, the Pass-E-Z-Y-Steering Wheel and Autocleno.

The sole owners of stock and directors comprise the following: Wallace C. Hood, Frank M. Eldredge and James E. Morgan, the latter now being a volunteer in the First Michigan Naval Reserves and chief yeoman on one of the big battleships.

### MECHANICAL ENGINEER PRAISES APPERSON CAR.

The Apperson Brothers Automobile Co., Kokomo, Ind., announces a letter received from Charles E. Torrance, the well known engineer. Coming from a mechanical and efficiency expert of the prominence that Mr. Torrance enjoys, his comment on the Apperson car is of particular worth.

Following is an extract from his letter: "I am at present driving and own one of your standard seven-passenger, six-cylinder, 1917 model touring cars, and can conscientiously say that it is the finest and most satisfactory car I have ever driven. It has a wonderful reserve of power and I have yet to find a New England hill that I cannot take on high gear and accelerate on without the slightest difficulty. I am getting 900 miles to a gallon of oil, using Mobile Arctic, and my gasoline mileage is proportionately excellent."

## Earnings of United Motors May Be $8,500,000

**Fiscal Year Statement Expected to Show Total Gross Sales of $33,000,000.**

The earnings of the United Motors Corp. for the fiscal year ending June 30 last are estimated at $8,500,000, based on gross sales of $33,000,000. A detailed statement of the company's business for the year will not be published for a month or so yet owing to the big task of preparing a statement combining the results of the operations of the six subsidiary companies that compose the parent organization.

When the United Motors was organized voting power was confined to 5000 shares of "Class B" stock, which were closely held, but plans have been completed for extending the voting privilege to the 1,195,000 shares of "Class A" stock.

### ADAMS-WILLIAMS CO. ELECTION.

Francis C. Schwab was elected president of the Adams-Williams Mfg. Corp., New York City, at a special meeting of the board of directors. C. D. Williams was re-elected vice president and L. W. Schwab was elected secretary and treasurer. The company is making a line of convertible tops or glass enclosures for several makes of automobiles.

### ERRATA.

In an item on page 20, this issue, Mr. R. G. Nelson should be announced as director of sales of the McGraw Tire and Rubber Co., East Palestine, O., not the Timken Roller Bearing Co.

## Grant Takes Deneen Plant for Truck Production

**Motor Car Corporation Entering Field with Denmo Distributing Organization Added to Its Own.**

The Grant Motor Car Corp., Cleveland, O., which has plans well under way for entering the light truck field this fall, has acquired the Deneen Motor Co., also of Cleveland. The latter company has an established line of popular priced trucks, containing six models—¾-ton, 1¼-ton, 2-ton and 2½-ton, and has quite a number of unfilled orders on its books, although production has been at the rate of 10 trucks a day for some time.

Provision for financing the purchasing of the Deneen company was made at a meeting of the stockholders of the Grant corporation on Aug. 24, when an increase in the capital from $3,000,000 to $3,500,000 was asked.

The manufacture of Denmo trucks will be continued in the Deneen plant pending the construction of the additional factory buildings that are now in course of erection at the Grant plant. Within two months, however, it is expected that quantity production of the new Grant-Denmo truck will be under way at the Grant plant.

With the Denmo organization already established and its own distributing organization, composed of 1200 dealers, the Grant corporation will enter the truck field with a well organized force of distributors.

The starting and lighting system on the Denmo truck was one of its exclusive features and was patented by F. S. Deneen, president of the company. He will have charge of engineering and sale of trucks in the new organization.

### NASH MOTORS WILL MARKET NEW "NASH" PASSENGER CAR.

The Nash Motors Co., Kenosha, Wis., has started production on a new passenger car model to be known as the "Nash," and will place it on the market in the near future. It will sell at less than $2000 and will be in addition to the "671" Jeffery seven-passenger model, which is being continued. The car is of distinct design throughout.

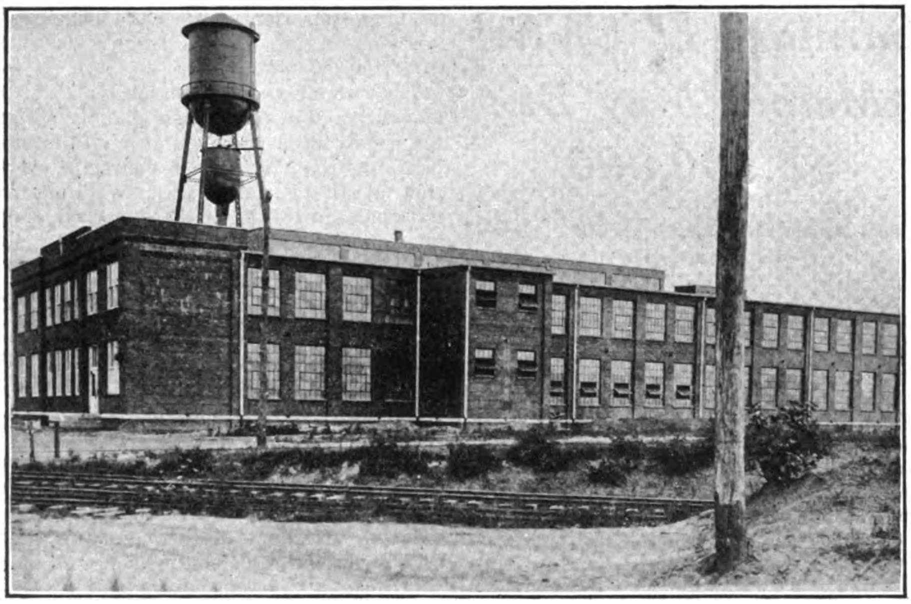
### A. B. CORNELL LEAVES EMPIRE.

A. Boyd Cornell, secretary for the past 14 years of the Empire Rubber and Tire Co., Trenton, N. J., has resigned. He has been succeeded by Harvey R. Nason, who has been with the Empire company for many years. Mr. Cornell, who resides at 924 Riverside Ave., Trenton, N. J., has not announced his plans for the future. He started in the rubber business in 1901 following his graduation from Princeton and worked through the various departments of the industry.

# *Big Tire Plant Started In South*

### Hanes Rubber Companys Opens Up Operations on Automobile Goods in the Cotton Country.

The Hanes Rubber Co., Winston-Salem, N. C., has started production on a line of Hanes automobile tires and tubes. The first tire was turned out in August. Hanes plain tread shoes, "Ground Gripper" non-skid tread and Hanes red and gray tubes will constitute the line at present and when a satisfactory formula is worked out a cord tire will be manufactured. Present facilities and equipment at the plant afford a daily production of 300 tires, which will be doubled as soon as equipment already ordered is installed. The single cure, wrapped tread process of manufacture is employed.



Modern Daylight Plant of the Hanes Rubber Co., Winston-Salem, N. C., Which Started Turning Out Automobile Tires and Tubes This Month.

A. S. Hanes, for 11 years head of the Hanes Hosiery Mills, and John W. Hanes, formerly with the American Tobacco Co., and the Delion Tire Co., Trenton, N. J., are the organizers of the Hanes Rubber Co. and sole owners, holding the entire $500,000 capital stock. They have spent two years in constructing the plant and purchasing the equipment, making a careful study to ensure a plant to manufacture a high quality tire economically.

Chris Miller, who has been with Dunlop of England, Michelin in France and the Continental in Germany, has been appointed general factory manager of the company.

The Hanes enterprise represents the first effort on a large scale to establish a tire plant in the South, which many regard as a favorable location because of its proximity to the cotton fabric district.

### CHANDLER EARNINGS UP.

The Chandler Motor Car Co., Cleveland, O., has declared the regular quarterly dividend of two per cent. and the customary extra one per cent., payable Oct. 1, to stockholders of record Sept. 15. For the seven months ending July 31 the company made net earnings of $1,830,476, as compared with $1,030,208 during the corresponding period last year.

### BIG SALES DEVELOPED IN CAR MONOGRAMS.

Every possible mark of distinctive identification a motorist can place on his car is a valuable factor in keeping it out of the hands of auto thieves and unscrupulous chauffeurs. Monograms on a car have been found to serve this purpose admirably and at the same time enhance its appearance, but owing to the time and cost of painting the monograms on by hand the practise has not been as general as it would have with a more convenient and inexpensive means. The Motorists Accessories Co., Mansfield, O., is marketing transfer letters which can be transferred to a car, motorcycle, trunk, bag or on any article presenting a smooth surface. They can be put on in from 10 to 15 minutes and are not affected by mud, dust or washing. Monograming outfits for the use of agents and garage men, including an assortment of sizes and styles, with the tools necessary for applying them, and a standard assortment of letters and insignia will be sent. The buyer may make his own selection of characters. At a charge of 25 cents per letter put on the garage man or dealer can pick up considerable money with an outfit.

### TO MAKE AUTOMOBILE PARTS.

The P. Whyle Merritt Co., New York City, have leased a brick building at the northwest corner of 12th avenue and 133rd street and will occupy it after the completion of extensive alterations. The company manufactures automobile parts.

# *Maxwell to Lease Chalmers Plants*

### Former Company to Turn Latter's Inventory Into Cash by Making Chalmers Cars.

The Maxwell Motor Car Co. will lease the plant of the Chalmers Motor Corp. and manufacture Chalmers cars for a period of five years. This plan has been decided upon as a means of tiding the Chalmers company over its financial difficulties, and calls for the raising of $3,000,000, which will be obtained through an issue of $3,150,000 par of first mortgage six per cent. five-year notes to shareholders at 95 per cent. of par to the extent of $10 of par value of notes for each share of stock now held. Each stockholder in the Chalmers corporation suscribing will get one share of eight per cent. cumulative preferred stock of par value of $100 each for each three shares of old stock held and to the extent of 50 per cent. of his present holdings.

Shareholders subscribing to the full quota of their notes will get also one-quarter of a share of no par value for each $10 of notes taken. If the shareholders take their full quota of notes, $360,000 of notes will remain which will be taken at the same price paid to stockholders by J. S. Bache & Co. and C. D. Barney Co.

It is understood that financial experts and bankers who have examined into the company's condition state that $3,000,000 will be sufficient to restore it to a sound basis again.

Under the plan for leasing the Chalmers plant and assets to the Maxwell Motor Car Co., the latter company agrees to turn the Chalmers inventory into cash by manufacturing Chalmers cars and to apply the cash in liquidating Chalmers obligations. It is further agreed under the plan that the Maxwell company will provide whatever additional capital might be needed to assure payment of the interest on the $3,000,000 of notes to be issued and adjust matters between the Chalmers company and its bank and mercantile creditors; also guarantees a return to the Chalmers company of 50 per cent. of the net profits from the annual operation of the plants.

### ADAMSON MANUFACTURING COMPANY ENLARGES PLANT.

The Adamson Manufacturing Co., East Palestine, O., have erected a large addition to their foundry building. The company is making Ford brake shoes, lined and unlined, light gray iron castings for automobile parts and other automobile specialties.

### AMAZON DECLARES DIVIDEND.

The Amazon Rubber Co., Akron, O., has declared a dividend of 3½ per cent. on the preferred stock of the company, payable Sept. 1 to stockholders of record at the close of business Aug. 20, 1917.

# *Carburetor and Kerosene Burning Devices*

### THE HOT PIN MANIFOLD.

If the experience of Europe is a reliable guide, this country will soon face a serious gasoline shortage. In both England and France, gasoline cannot be secured for pleasure cars or private purposes. Since kerosene is a logical substitute for gasoline, many motorists are on the lookout for equipment so they may utilize this fuel. Among the devices now on the market for the purpose of vaporizing kerosene is the Hot Pin Manifold, so called because of its peculiar construction. Cast integral with the exhaust manifold is the intake. Projecting into the intake passage are numerous pin shaped studs that absorb the heat from the exhaust and transmit it to the incoming gas, much the same way that projecting fins on an air cooled engine, radiate the heat to the passing air.

By this construction two things are accomplished; the incoming mixture is thoroughly vaporized and made fit for combustion, and the exhaust gasses are cooled, thereby keeping down the engine temperature.

It is said that with this device the kerosene is fully vaporized or a better vaporization of gasoline is obtainable if that fuel is used. The carburetor is of the two feed type, with connections to a main kerosene tank and an auxiliary gasoline tank for starting.

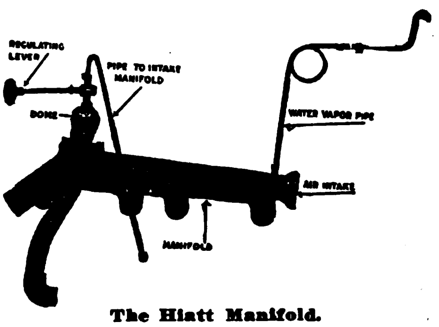
**Manufactured by Kerosene Burning Carburetor Co., 9 Selden Ave., Detroit. Mich. Write for prices and literature. Dealers write for proposition.**

### THE HIATT MANIFOLD.

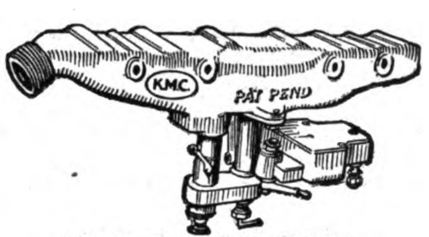
A device for a more full utilization of fuel is called the Hiatt Manifold. It consists of a manifold fitted to take the place of the regular Ford manifold, but differs from it in that it has a hollow pipe on the inside of the body. This hollow pipe takes through it air from the outside, which combines with water vapor coming from the radiator through a small copper pipe. The mixture passing through the pipe is superheated, due to the exhaust gasses passing around the internal pipe, and upon collecting in the dome, the superheated vapor laden air, gaseous in form, is passed to the intake manifold and mixed with the gas from the carburetor.

The manufacturers claim that in tests the manifold averages from 26.7 to 32 miles on a gallon of gasoline, in a Ford touring car, containing four people. As a comparison, tests made with the same car, but without the Hiatt manifold, averaged but 17.1 miles to a gallon. In addition to the high mileage, it is said that the device makes a smoother running engine, gives more power and eliminates carbon.

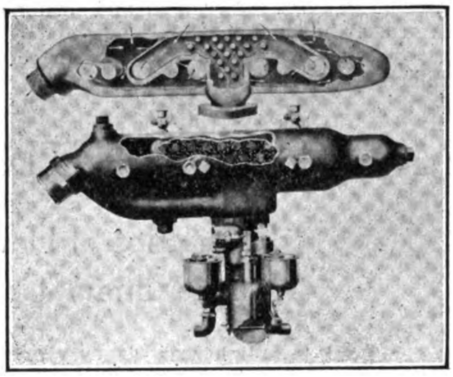
**Manufactured by the Hiatt Manifold Co., Indianapolis, Ind. Price complete, $15. Dealers write for special offer.**



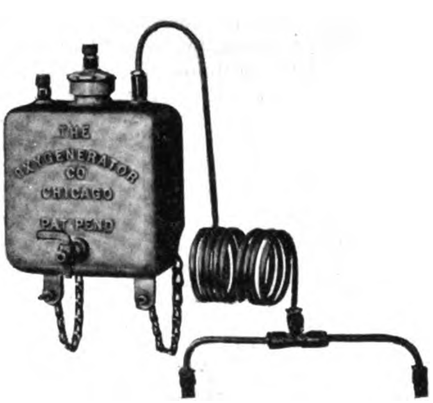
The Hiatt Manifold.



The K. M. C. Transformer.



The Hot Pin Manifold.



The Oxygenerator Outfit.

### THE K. M. C. TRANSFORMER.

The dream of the automobile world for the past few years has been a carbureting device that would vaporize kerosene, enabling the use of this less expensive fuel in place of the ever decreasing gasoline. The K. M. C. transformer, so called, is said to offer a solution to the big problem, since it enables one to use kerosene as a fuel. At present this device is designed for Ford cars and consists of a combination inlet and exhaust manifold, and a special combination carburetor.

For starting the engine gasoline is used, and when the manifold has been fully warmed the gasoline is shut off and kerosene admitted, the heat of the manifold vaporizing this less volatile fuel to such an extent that no liquid kerosene finds its way into the cylinders. In addition to the saving from the first cost, an increased mileage, when kerosene is used, makes this form of fuel economical.

**Manufactured by the Kerosene Motor Co., Peoria, Ill. Price complete with auxiliary tank $37.**

### THE OXYGENERATOR.

It has been known for some time that water is one of the antidotes for the carbon trouble and engineers have been working to produce a device that would automatically supply a certain amount of water vapor and introduce it into the engine cylinders. For this purpose the Oxygenerator has been designed.

The Oxygenerator consists of a water container and a copper coil. The container is attached to the exhaust manifold and from it the copper coil carries the water around the manifold several times and into the intake manifold. In passing from the water container to the manifold through the coil the water is heated to a high temperature, producing steam, which entering with the gas mixture breaks up the carbon and prevents it from adhering to the piston, valves or head of the engine. In this way the device acts as a preventive as well as a cure.

**Manufactured by the Oxygenerator Co., 1919 S. Michigan Ave., Chicago, Ill. In writing for prices be sure to give name, model and year of car.**

### VORTEX GAS GENERATOR.

To get a perfect mixture is one of the fundamentals of ideal carburetion. Everyone knows that if a lump of sugar is placed in their coffee the drink will be sweetened to a certain extent, though it will be a question of time. If granulated sugar is used, the time is reduced, and if the liquid is stirred the sugar dissolves much quicker. This same condition is true of practically any mixture, and is equally true of gasoline and air. The finer the gasoline particles are broken the more perfect the mixture. The Eastman vortex gas generator consists of two-gauze vaporizing meshes, which are placed between the carburetor and intake manifold. The upper mesh is funnel shaped and so designed that the entering gas is vaporized fully. It is said that with this device a mixture of one-third kerosene and two-thirds gasoline may be used. The device is sold under a guarantee and a trial of 10 days is allowed, with money refunded if the apparatus is not satisfactory.

**Manufactured by Eastman Vortex Gas Generator Co., 16-18 East First Ave., Columbus, O. Price $1.50.**

# AUTOMOBILE PARTS BUSINESS

## A New Branch of the Automobile Industry—Its Scope and Developments

By PHILIP H. HALE, JR.

IN THE past three years a comparatively new business has been developed in the sale of automobile and accessory parts, of which there has been but little publicity given, and for that reason few people, aside from garage and repairmen, are familiar with the automobile parts business.

Some people have the idea that firms engaged in the automobile parts business are pirates and manufacture parts to compete with the manufacturers of automobiles and undersell them. Such is not the case. It is a separate and distinct business and in but few cases do they manufacture any parts. Their business begins where the manufacturer drops out.

There are a number of cars in operation which are no longer being manufactured. In some instances the supply of parts are bought from the manufacturers by such firms or they secure the rights to manufacture them. However, the bulk of the parts business is for standard cars. By standard cars it is meant such cars as are being manufactured today.

Where do these firms get their stock of parts? Go to the shop of one of these firms and there you will see from one to 10 cars of different makes being torn to pieces every day. Each scrap of iron, steel, tin or aluminum being saved, some to be resold as parts and the other to be sold as junk at so much per pound. Every part is examined and those that are found to be in good serviceable condition are listed and put in stock, others are junked and sold as such.

The cars that are wrecked by these firms are bought after they are no longer of use to their particular owners. The history of some of these cars would read like fiction. The manager of one firm told me the story of a car which had been in his possession two different times. During the life of this car, to his certain knowledge, five people had lost their lives in it from accidents. The last time he had possession he wrecked it and sold the parts, making shipments to all parts of the United States. The engine went to a federal judge in Virginia, the rear axle to a garage in Texas, the transmission to a party in Montana, and there is no telling where the balance of the parts will go. Such is the end of many a good machine.

As stated before the automobile parts firms begin where the manufacturer leaves off. When cars pass out of the hands of the original owners they are usually at an age where they require replacement of parts. Cars which sell for $500 to $1000 change hands from 12 to 14 months; from $1000 to $1500, 15 to 24 months; $1500 to $2000, 24 to 30 months; $2000 to $3500, from 30 to 36 months, before they get to the stage where it is necessary to make replacement of parts. When a car gets to this stage they are usually in the hands of owners who do not care to pay the cost of new parts from the manufacturer and they go to the automobile parts firms, where they get good, serviceable parts at from 50 to 75 per cent. discount.

These firms also have a large line of accessories and parts, which are obtained in the same manner as automobile parts and furnish most anything in this line.

The firms that advertise guarantee their parts to be in good serviceable condition and, in the majority, are reliable. This new business is enjoying the support of owners, repair men and dealers in second hand cars, and is destined to become one of the leading lines in the automobile business.

### FISK RUBBER EARNINGS NEARLY $2,000,000.

The Fisk Rubber Co., Chicopee Falls, Mass., reports net earnings of nearly $2,000,000 for the six months ending June 30. The total sales for the period were $15,714,971, as compared with $19,457,788 for the entire year in 1916. Allowing for depreciation and interest, the net income for the six months was $1,983,627, as compared with $1,836,829 for the entire year of 1916. The balance sheet as of June 30 showed net quick assets of $10,726,267.

### U. S. LIGHT AND HEAT CORP. EARNS $4884 FOR YEAR.

The U. S. Light and Heat Corp., Niagara Falls, which closed its year June 30, 1916, with a deficit of $331,792.42, ended the last fiscal year on June 30 with a net profit of $4884.30. An increase in the total volume of business of 72 per cent. for the year was reported.

Officers have been re-elected as follows: E. H. Gold, chairman of the board; president, J. Allan Smith; vice presidents, C. L. Lane and H. C. Caples; treasurer, J. O'Reilly.

# MOUNTING OF THE A. B. C. STARTER

## Description of Device Balanced So No Undue Strain Comes on the Chassis

The Ford is a light car, as everyone realizes, and to put a heavy starting system on it is impractical. To fill the requirements of an ideal Ford starting and lighting system the units must be so balanced that no undue strain is put upon the chassis. Such a system is the A. B. C. electric starting and lighting system made by the A. B. C. Starter Co. of Detroit, Mich.

This system is comprised of two units, a generator and a starting motor, designed to be placed, one on each side of the engine, so as to make an even distribution of the weight. In mounting the system no changes are made in the Ford construction.

A. B. C. Ford Starter.

The generator is mounted on the left side of the engine, at the front, on a bracket which is supported from the crank case. It is driven by a flat belt from the regular fan driving pulley. The fan pulley acts as an idler for keeping the belt under tension. The current output is kept under control by a Ward-Leonard current regulator mounted on top of the generator.

The starting motor is mounted on the right and transmits the power to the crankshaft through a special spring drive and double reduction gears, which in turn drive by a roller chain to a shaft connected with the front end of the crankshaft.

It is said that the starting of the engine is gradual, due to the double reduction and the special spring arrangement on the motor shaft, thus bringing no quick pull upon the engine or motor. After the engine has been started the motor is automatically disconnected from the shaft.

The storage battery which is included with the system is an Exide, and has a capacity of 60 ampere-hours and a voltage of six. The price of $95 includes the installation of the system.

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The Miller Rubber Co., Akron, O., for the first seven months of the current year made net sales of $6,605,776, as compared with $3,599,037 in the corresponding period of 1916.

# *Studebaker Co. Cuts Its Dividends and Production*

### Now Operating Factories on a 65 Per Cent. Schedule as Compared with Last Year.

Following the announcement of the Studebaker Corp., South Bend, Ind., of a cut in its dividend on the common stock rate to one per cent. for the quarter, as compared with 2½ per cent. formerly paid, President Erskine gave out a statement in which he explained that the "uncertainties of the future" and the "necessity for conserving the capital" made the action of the directors necessary.

His statement in part was as follows:

"The extensive manufacturing operations of last winter, including accumulation of large stocks of raw materials brought into the factories to safeguard against shortages and transportation difficulties and followed later by substantial purchases of steel and lumber on account of government orders, explain the existence of the large inventory ($25,030,000) shown on the balance sheet. However, the surplus inventories are now in process of liquidation, which will bring them back to a normal basis before the end of the year.

"It has turned out fortunately for our customers that our purchases of materials at prices prevailing last year have enabled us to keep our prices down to a low basis. Our existing stock of finished cars covers less than six weeks' requirements, and the management expects to encounter no difficulty in marketing these cars, together with those yet to be manufactured to complete the production schedules for the balance of the year. In fact present indications are that there will be a shortage of Studebaker cars during the forthcoming winter months.

"The net profits for the first six months amounted to $2,966,198 after deductions for existing corporation income taxes, but without provision for excess profits taxes about to be enacted by Congress.

"The sales of automobiles in the first quarter exceeded those of any year of any previous similar quarter, but upon the entrance of our country into the war sales declined and our second quarter was unsatisfactory. Factory production schedules were changed in May to conform to the reduced volume of business and we are now operating on a 65 per cent. schedule as compared with last year. The effect of reduced volume in quantity production increases overhead costs, and when coupled with the existing high costs of materials and labor is damaging to the profits of the business.

"Since July 1 sales of cars have improved and the present demand is for about 1000 cars per week.

"The regular business in the vehicle division for the first six months was excellent and promises to continue heavy throughout the year. In addition we have received orders from the government for large quantities of escort wagons, ambulances, drinking wagons, harness, etc., with the result that our vehicle factories will operate to the limit of their capacity far into next year.

"The balance sheet as of June 30, 1917, shows total tangible assets of $55,400,000, including $41,100,000 of quick assets and $14,300,000 of plant and property account, against which stand $16,000,000 of liabilities, including $13,200,000 of bank loans. Since June 30 bank loans have been reduced to less than $11,000,000."

Following is the consolidated balance sheet of the Studebaker Corp. as of June 30, 1917, and that of Dec. 31, 1916:

ASSETS.

| | June 30, 1917. | Dec. 31, 1916. |
|---|---|---|
| Cash ............ | $2,786,218 | $3,196,703 |
| Investments ..... | 1,131,770 | 1,142,045 |
| Receivables ..... | 11,834,525 | 9,428,391 |
| Inventories ...... | 25,030,316 | 21,477,657 |
| Deferred charges | 340,772 | 235,492 |
| Plant and property....... | 14,272,011 | 13,437,983 |
| Trade name, good will, etc....... | 19,807,277 | 19,807,277 |
| Total.......... | $75,202,890 | $68,725,549 |
| LIABILITIES. | | |
| Preferred stock.. | $10,965,000 | $10,965,000 |
| Common stock... | 30,000,000 | 30,000,000 |
| Notes payable... | 13,231,500 | 4,000,000 |
| Accounts payable | 952,614 | 3,542,886 |
| Deposits on contracts ......... | 299,929 | 342,111 |
| Reserve for rebates .......... | 873,354 | 689,320 |
| Sundry creditors. | 576,530 | 1,964,694 |
| Contingency reserve .......... | 1,358,237 | 1,358,237 |
| Special surplus account ....... | 2,548,654 | 2,548,654 |
| Surplus ......... | 14,397,071 | 13,314,647 |
| Total.......... | $75,202,890 | $68,725,549 |

# *Electric Auto Lite Issues $5,000,000 Gold Notes*

### Net Income for the First Six Months of the Current Year Amounted to $1,703,222.

The Electric Auto Lite Corp. is offering through the National City Co., New York, an issue of $5,000,000 six per cent. gold notes, maturing in one and two years; $2,000,000 falling due in one year and $3,000,000 in two years. The one-year notes will be offered at 99¼ and interest and the two-year notes at 98 and interest, yielding 6¾ per cent. and 7 per cent. respectively. The notes are secured by collateral pledged to the value of over $17,000,000. This collateral includes common stock of the Willys-Overland Co., Fisk Rubber Co. 7 per cent. second preferred stock. The Electric Auto Lite Corp.'s net income for the first six months of the current year amounted to $1,703,222, and the dividend income from stocks pledged amounts to $820,000.

### AMAZON ISSUES NEW HANGER.

The Amazon Rubber Co. at Akron is furnishing to dealers a new decorative hanger lithographed in eight colors. This hanger is on 10-ply Bristol board, has a a silken cord for hanging.

# *Big New Pathfinder Co. of America Organized*

### Concern Capitalized at $2,000,000 Will Also Enter Manufacture of Motor Trucks.

The Pathfinder Company of America has been organized to succeed the Pathfinder Company, Indianapolis, Ind., with a capital stock of $2,000,000.

The new company will continue the manufacture of Pathfinder pleasure cars without change in larger volume than before and will also enter the commercial truck field.

The officers and directors of the new company are: President, Charles McCutcheon, Indianapolis; vice president, Fred C. Dorn, Cleveland; secretary and treasurer, Paul N. White, Indianapolis; directors, the officers and C. J. Root, Terre Haute, Indiana, chairman; A. C. Brown, St. Louis, president of the Hamilton-Brown Show Co.; William A. Umprey, Indianapolis, vice president Weidley Motors Co.; Paul N. White, Indianapolis; Charles McCutcheon, formerly president of the Jackson Gear Co., Jackson, Mich., and George H. Mosher, capitalist, Los Angeles.

The officers of the former company were: President, William C. Teasdale, Jr.; vice president, W. E. Stalnaker; secretary-treasurer, Wayne K. Bromley. Karl Felicke, the chief engineer, remains.

The enlarged plant for the manufacturing of pleasure cars and commercial trucks will be at the present site, 1136 Division street, Indianapolis, Ind.

### COMBINATION OF AUTO PARTS MANUFACTURERS.

The Morrill & Morley Manufacturing Co. and the Electric Specialties Manufacturing Co., Benton Harbor, Mich., have combined under the name of the Benton Harbor Auto Machine Co., with an authorized capital of $174,000, $87,000 of which is paid in.

Both companies were engaged in manufacturing automobile parts and as the personnel of the stockholders was practically identical it was deemed advisable and for the best interests of both concerns to combine. Officers of the new company are: President, J. N. Klock; vice president, L. N. Allen; secretary, H. S. Gray; treasurer and manager, R. C. Eisley.

### STANDARD BEARINGS WILL DIRECT SALES.

The Marlin-Rockwell Corp., which recently acquired all the assets of the Standard Roller Bearing Co., Rockwell-Drake Corp., Mayo Radiator Co., and the Marlin Arms Corp., has announced that the sales of all the subsidiary companies, except the Marlin Corp., will be directed by the sales organization of the Standard Roller Bearing Co. of Philadelphia.

# SPRINGFIELD BODY RECEIVERSHIP

## Court Places Newly-Elected President in Charge of the Corporation's Affairs

B. F. Everitt has been appointed receiver for the Springfield Body Corp. by the Detroit court. The action came as a surprise on the eve of what was thought to have been a satisfactory arrangement with creditors, and Mr. Everitt had been elected president of the corporation.

Figures on the financial condition of the company have not been given out as yet, but it is reported that the business is solvent, with assets of approximately $1,400,000 and liabilities of less than half that sum. It is stated that the creditors on the bankruptcy petition represent only about 25 per cent. of the total. The concern's financial troubles are laid to lack of capital due to recent heavy expenditures for a new plant, and large contracts for supplies on hand which had to be paid for as delivered. These difficulties were accentuated by the falling off in receipts last spring when the sales of motor cars showed a marked decline.

Before the bankruptcy petition was filed a plan had been agreed to by about 75 per cent. of the creditors, under which new stock was to be issued, part of which would have been exchanged for the old stock and a part subscribed for by the stockholders, the cash paid in to go into the treasury as working capital.

### STANDARD PARTS COMPANY EARNED $360,359 IN SIX MONTHS.

The Standard Parts Co., Cleveland, O., make net earnings of $360,359 in June and for the first six months of the fiscal year ending June 30 made $1,994,793.02 net. The semi-annual earnings were at the rate of 30 per cent. on the common stock.

### CAR OWNERS WILL AID IN CROP HARVESTING.

The State Council of Defense of the State of Wisconsin has issued an appeal to car owners to organize county squads for the purpose of taking harvesting hands to and from the fields.

### H. V. McKENNA WITH PUGH BROS.

Harold V. McKenna, formerly with the E. B. Chace Co., has taken charge of the parts department of Pugh Bros. Co. of Providence, R. I.

### "LET'S PULL TOGETHER."

"Let's pull together" is the keynote of a campaign recently featured by Findeisen & Kropf, makers of the Rayfield carburetor, in which dealers, service stations, jobbers and distributors are shown how to work with the manufacturer for mutual benefit.

One of the features of the campaign is a large enameled sign in colors, featuring the name of the local dealer. The dealer is provided with these at very low cost and fastens them on posts, trees or fences along the highway radiating from his town. It is pointed out that one good place to advertise to a motorist is where the need is likely to arise. Therefore, this sign is a most logical device for attracting interest of motorists who require service or automobile supplies of any kind. This manufacturer has just issued a most valuable work containing over 1500 engine specifications and more than 300 makes of automobiles, showing the relation of carburetors and motors of exceptional value to garage men, service stations and dealers.

### GOULD MOTOR PARTS CO. ORGANIZED AT YORK, PA.

The Gould Motor Parts Co., recently organized under the laws of Delaware with an authorized capital of $2,000,000, will manufacture automobiles, airplanes and a new type of differentials. The company will occupy the plant of the York Bridge Co., and will employ a force of between 500 and 600 men within a few months.

Walter O. Lum of York will be president and chief engineer of the new enterprise. He was formerly with the General Electric Co. at Schenectady and later with the Westinghouse Co. at Pittsburgh as automobile and development engineer. Thomas B. Baird of York will be treasurer of the company. The directorate will be composed of these two officials and the following: G. Brewer Griffin, manager automobile equipment department, Westinghouse Electric and Manufacturing Co., Pittsburgh; John F. Blanchard, president Van Kannel Revolving Door Co., New York; H. T. E. Beardsley, vice president of the New Amsterm Casualty Co., New York; James A. Kline, general manager of the Kline Car Corp., Richmond, Va.; W. E. Lennon, assistant secretary Western Union Telegraph Co., New York.

### MAKE TRIP TO CAMP ON HARTFORD SHOCK ABSORBERS.

Dealers everywhere, as there are recruits in every neighborhood, will find it to their advantage to keep in stock, as an attractive ready seller, the 25-set locality Hartford shock absorber proposition.

The travel trend will be to see the soldier boys this fall, and their encampments will become motorists' meccas. The cantonments, or training camps for our great army are now approaching completion and as the South is favored with the opportunity for the major part of the soldier boys, early in September should bring a motoring touring army of relatives and friends for visiting and to witness the manouvers.

Hauling of munitions and commissaries necessarily plays havoc with ordinary highways, ruts follow, as well as jolts and jars to the car. Hartford Shock Absorbers obviate uncomfortable riding even on the worst roads and as additional spring equipment they prevent shocks to the car's mechanism.

### HAYES WHEEL COMPANY INCREASES ITS CAPITAL.

The Hayes Motor Truck Wheel Co., St. Johns, Mich., has increased its capital from $100,000 to $500,000. Approximately 200 sets of wheels a day are now being produced by the company and with the addition of a few more machines a production of 500 sets daily will be possible.

### SHADBURNE BROS. WILL MAKE DIXIE FLYER.

Shadburne Bros. Co., Chicago, Ill., which entered the automobile manufacturing field with the Shad-Wyck Six, on which production will commence this month, and later extended its activities through the purchase of Bour-Davis Co. of Detroit, have also acquired the Dixie Motor Car Co. of Louisville, Ky., manufacturers of the Dixie Flyer. All three cars will be manufactured independently and sold under their present names. Among the medium priced cars, the Dixie, which will be sold at $895, has enjoyed a large demand for the past three years. The entire plant equipment of the Bour-Davis Co. has been moved from Detroit to Frankfort and production has been resumed.

### BEARINGS RECORD KEPT BY ELECTRICAL MACHINE.

The securing of data from every section of the country to enable the Bearings Service Company to supply at a moment's notice any anti-friction bearing needed by the thousands of motor cars and trucks operating in each section, is proving a tremendous task. Human hands could not accomplish the work quickly enough, so a wonderful electric tabulating and listing machine has been designed and has just been installed in the general offices at Detroit to facilitate the compilation of this information.

The bearing requirements of different sections of the country necessarily vary. About Chicago there may be five makes of cars that are far in the majority; about Kansas City or Seattle there may be five other makes that are in the lead. With its elaborate data system, however, the Bearings Service Company is able to supply each of its branches with stocks of bearings that are sufficient for the needs of that particular section.

"Our constant aim," says A. K. Hebner, general manager, "is to intensify our service so that motorists, automobile dealers and garage men, and, in fact, any one who needs a bearing for a motor car, can get the bearing he wants at the time he wants it, and with the absolute assurance that it will fit the location for which it is required.

"When it is realized that there are hundreds of different makes of automobiles in use in various sections of the country, many of them obsolete, and all of them having different kinds and sizes of bearings, the enormity of the task in assembling data on every car, so that it will be readily available, can in some measure be appreciated. This data is tabulated and arranged in a form for convenient reference so that the motorist may have his needs quickly and accurately filled. All that the motorist has to tell us is the name, make and model of his car, and the bearing location. Our detailed records then enable us to supply the proper bearing for the installation, regardless of what the car may be."

### THOMAS TRUCK AND ARMORED CAR.

The Consolidated Motors Corporation, which was recently organized for the purpose of acquiring established motor truck plants, has acquired the Thomas Auto Truck Company and the Armored Motor Car Company, both of New York.

The plant where the Thomas trucks are built in New York City will be retained and the manufacture of these vehicles will be continued there largely for local business. It will also operate a service and sales branch at the same place, so that the New York City users will have all the advantages of a factory nearby.

A large steel and concrete plant at Schenectady, N. Y., has also been purchased by the Consolidated Corporation and it is being remodeled and altered as an up-to-date factory for the manufacture of motor trucks, bodies and parts. The latest type of machinery with many labor saving devices is now being installed. The factory now has about 750,000 square feet of space and additions planned will give 2500 square feet more. There is room on the site also for more than doubling this floor area when required.

A patented body will be made at the plant for Thomas trucks exclusively, so that the trucks can be shipped to the dealer and user ready for use.

The Armored Motor Car Co. controls various patents on the single and double revolving turret gun cars, a large number of which have been manufactured in Europe by special license, and are now doing service on French and Russian fronts.

C. K. Thomas, president and founder of the Thomas Auto Truck Company, and previously vice president and general manager of the Federal Motor Truck Company of New York, is head of the Consolidated Motors Corporation.

Headquarters of the company are at 639 West 51st St., New York City.

### O. P. STEHM OF PRESSED STEEL CO. IS DEAD.

O. P. Stehm, for the past six years general sales manager of the Hydraulic Pressed Steel Co., Cleveland, O., died on Aug. 5. He was in his 40th year.

# WORLD'S MARKET FOR CARS

## Foreign Automobile Prospect Estimated in National Manufacturers Association Survey

The Foreign Trade Department of the National Association of Manufacturers has issued a survey of the use of the automobile in all countries, with an estimate of the buying possibilities of these countries under normal conditions. It should prove exceedingly interesting to the manufacturer of automobiles and his export manager and also manufacturers and exporters of the many accessories used on motor cars.

In compiling the statistics in the report the figures of the estimated registration on Jan. 1, 1917, of 3,500,000 automobiles for this country's 103,000,000 people, if evenly distributed, are used as a basis for the computation.

Arbitrary ratios have been used in arriving at a potential purchasing capacity of a given country, although in arriving at these ratios a number of factors have been carefully considered.

The following table gives a summary of the findings of the report, which is practically self-explanatory and is given by principal geographical divisions:

| Division | Cars in Use Jan. 1, 1917. | Full Parity with U. S. A. | Potential Market Outside U. S. A. |
|---|---|---|---|
| United States | 2,500,000 | 3.500,000 | ...... |
| Canada and other North America.... | 118,086 | 295,413 | 200,425 |
| Mexico and C. America | 5,744 | 710.000 | 29,785 |
| S. America.. | 39,188 | 1,900,100 | 239,950 |
| West Indies. | 11,394 | 301.000 | 27,200 |
| Europe ...... | 437,558 | 15,583.300 | 2.408,860 |
| Asia ........ | 27,758 | 28,876,300 | 372,675 |
| Africa ....... | 24,178 | 4,513,700 | 100,675 |
| Australasia and Oceania | 55,340 | 521,300 | 238,000 |
| Totals...... | 4,219,246 | 56,201,213 | 3,617,570 |

The tables have been compiled from many sources of information: American and foreign government statistics, trade journals, consular reports, communications with correspondents abroad, interviews with business men of many countries; in fact, every available medium has been diligently studied for a long time in order to bring the results as near to the date, Jan. 1, 1917, arbitrarily taken, as practicable. But it must be manifest to every manufacturer and statistician that to get from all the countries and subdivisions, as well as the colonies in every land in the world, precise statements of the number of passenger cars in actual use on one and the same day is a practical impossibility. With these figures as a basis for speculation, however, it is interesting to note what stupendous figures would be required to express the whole world's use of automobiles were each country to have a number of cars, according to its population, equivalent to what the United States is shown to have had at the beginning of 1917. The total, 56,000,000 cars, borders on the realm of imagination.

When attempting to fix the ratio of potential purchasing capacity, a number of factors were carefully considered. These included points of physical and commercial geography and the civilization and habits of peoples. The physical development of the country was measured very carefully. It is manifestly absurd to think of automobile development among the Samoyeds of Central and Northern Siberia, the natives of Arabia or the Congo negroes, upon the same scale as in France. Purchasing power comes finally to be measured by the individual and community purses.

There are in the United States easily 10,000 people who can buy and operate an automobile to one who can do so in China. This disparity is probably the greatest, yet it will be readily discernible in the other parts of the world, in differing degrees, by all careful students. As the cheaper makes of cars are improved and their prices, hopefully, still further lowered, it is needless to say their use in territories now considered "impossible" will expand rapidly. Then, too, the second hand and third hand automobile has not yet found its way into remote districts abroad; when it does so, as it is sure to do, the potential purchasing capacity of many countries now thought negligible will be well worth considering. The investigations upon which this report and tables are based, brought out conspicuously the fact that already the automobile has established itself in lands which would not have been considered a few years ago.

### TORONTO WILL HAVE BIG AUTOMOBILE SHOW.

Canada's biggest automobile show will be staged in the Transportation building of the Canadian National Exposition in Toronto, Aug. 25-Sept. 10. A large number of exhibitors have already secured space and the whole building will be devoted to automobiles and accessories.

A big advertising campaign is being conducted throughout Canada and the officials, as a result, anticipate an attendance exceeding 1,000,000.

### TRAIN LOAD OF OLDSMOBILES SENT TO WESTERN DEALERS.

A solid train load of 60 Sante Fe automobile cars, containing 207 Oldsmobiles, left the factory of the Olds Motor Works, Lansing, Mich.. July 29, enroute for Kansas City. The value of the shipment was $283,761 and transportation charges alone totaled over $15,000.

# Activities of Prominent Men of the Industry

## Resignations, Promotions and Other Changes in Personnel of Motor Vehicle Manufacturing and Merchandising Companies and Allied Businesses

**George D. Wilcox**, for the past four years sales manager of the Commerce Motor Truck Co., has been commissioned a captain in the ordnance section of the United States army and it is expected will be assigned to the duty of inspecting tractors and armored cars. Mr. Wilcox has had extensive experience, which fits him for these duties, in addition to his connection since 1903 with the motor industry, he spent many months abroad working with the British ordnance officers on technical and organization affairs.

George D. Wilcox, Sales Manager of Commerce Motor Truck Co., Detroit, Mich., Becomes Captain in Ordnance Section.

**James W. Turner** has been appointed assistant manager of the Maxwell Motor Sales Corp., Detroit, Mich., to direct the work of expansion in the wholesale and retail sales field. He will be assistant to Mark C. Manship. The increased Maxwell sales have necessitated the establishment of dealerships in Chester and Delaware counties and in upper and lower Merion townships.

**D. R. Parsons** is president of the Brown-Hare-Parsons Co., Detroit, Mich. He has been prominently identified with the marine business for the past 25 years and still retains his large shipping interests and only gives part of his time to the distribution of the Disco product. Mr. Parsons built the first self unloading type of lake steamer, which has now become so prevalent.

**R. E. Hayslett**, formerly connected with the Timken Roller Bearing Co., is now serving in the capacity of assistant to John Morgan, vice president and treasurer of the McGraw Tire and Rubber Co., East Palestine, O.

**R. G. Nelson** is now serving in the capacity of director of sales of the Timken Roller Bearing Co. He will have direct control over all general office and branch sales. F. C. Strayer is placed in the position of Atlanta district manager.

**H. C. Smith** has been appointed manager of the Kansas City branch of the Mason Tire and Rubber Co. of Kent, O. Mr. Smith has been a salesman and with the company since its organization. He succeeds G. C. Van Veen, who has been transferred to Chicago to open a new branch.

**Leonard Coates**, St. Louis, Mo., is now with the Barnett Sales Co., manufacturer of commercial bodies for light motor cars. The company is now located at 411 North Second street.

**H. A. Venard**, Seattle, Wash., has been appointed special representative for the Firestone Tire and Rubber Co. in Western Canada. Headquarters will be maintained in Vancouver, B. C.

**C. T. Chenevert** has been appointed vice president, and M. E. McKinney has been made sales manager of the Denby Motor Truck Co.

**R. W. Brouse** has been assigned as manager of the Buffalo branch of the B. F. Goodrich Co. For two years Mr. Brouse has been assistant branch manager in Philadelphia and previous to that time had been with the Goodrich company for eight years.

**Charles W. Schoenig**, St. Louis, Mo., has been appointed manager of the Ollie Haupt Motor Car Co., Ford agent, St. Louis, Mo. For four years he was with the wholesale department of the Ford Motor Co.

**George W. Reinbold** has made arrangements with the Mutual Motors Co., Jackson, Mich., to distribute the Marion-Handley for Pennsylvania. He was formerly Scripps-Booth distributor for Philadelphia.

**L. H. Scurlock** is president of the Krom-Nik Gear Co., recently organized in Chicago. J. W. Fulton is vice president and J. S. Houston is secretary and treasurer.

**P. C. Christman** has resigned as district manager and sales engineer for the Burd Ring Sales Co., Rockford, Ill., to become vice president and general manager of the Gill Piston Ring Co., New York. He was for three years with the Burd Ring Sales Co.

**Carl L. O'Donnell** has been appointed district manager of the Olympian Motors Co. for the Ohio, Indiana and Michigan territory. Frank A. Witt, formerly southern district sales manager of the Hupp Motor Co., has been appointed southern district manager of the Olympia.

**G. C. Martin** has been placed in charge of the manufacturing department of the J. C. Wilson Co., motor truck builders. Mr. Martin was formerly with the Federal Motor Truck Co.

**K. W. Hooth** of the engineering department of Fuller & Sons Manufacturing Co., is in Washington working in conjunction with federal engineers on a transmission design for the war department.

**R. W. Allan** will have charge of the manufacturing of the C. R. Wilson Body Co., Detroit, Mich. For six years he has been purchasing agent and is familiar with the manufacturing end of the business.

**C. G. Lewis**, for four years assistant district manager for the Hudson Motor Car Co., has been promoted to the managership of the territory. He succeeds R. S. Barrett, who has resigned to take a position with the H. O. Harrison Co., Hudson distributor in San Francisco.

**John S. Speck** has been appointed factory engineer and assistant to E. C. Shumard, chief engineer of the United States Motor Truck Co., Cincinnati, O. For six years he was factory manager of the Federal Motor Truck Co., and previous to that time was with the Oakland Motor Car Co.

**George J. Bates** has resigned his position as commercial manager of the King Motor Car Co.

W. C. Rowley, New Traffic Head for Federal Motor Truck Co., Has 32 Years of Railroad Experience.

**L. W. Coppock** will handle the commercial end of the business, including sales and advertising of the Higrade Motors Co.. acting as assistant to J. Elmer Pratt, president. He will retain supervision over the engineering department as formerly.

**C. A. Carey**, formerly with the Chandler Motor Car Co. as purchasing agent, has become a director of sales and pur-

A. F. Knobloch, Vice President and General Manager Cole Motor Car Co., Indianapolis, Going to Another Position.

chasing of the H. J. Walker Co., Cleveland, maker of engines and parts. C. R. Armbrust, formerly assistant engineer of the Chandler Motor Car Co., has been appointed chief engineer of the H. J. Walker Co.

**Arthur W. Ellis** has been appointed as assistant manager of the New York branch for the Goodyear Tire and Rubber Co. He was for six years manager of the Louisville branch.

**A. F. Knobloch** has resigned his position as vice president and general manager of the Cole Motor Car Co., Indianapolis, Ind. He is taking a short vacation, after which it is understood he will become connected with the M. & S. Gear Co. Mr. Knobloch was one of the organizers of the Northway Motor and Manufacturing Co., of which he was general manager and engineer.

**W. C. Rowley** has been elected vice president in charge of sales of the Federal Motor Truck Co. to succeed J. F. Bowman, who recently resigned. He has been a director of the Federal company for some time and was formerly in the railroad business, having been connected with the Michigan Central for 32 years before entering the motor industry. He was considered one of the leading authorities on transportation matters in the country.

**F. J. Major** is leader of the Republic Truck Co. band, 50 pieces, which while in Chicago recently participated in the parade that was held to stimulate recruiting. The occasion was one of unusual patriotic significance as so many of the members of the band have been recruited that it will have to dissolve probably until the war ends.

**R. M. Schiele** has been appointed assistant sales manager of the H. Varcroft White Corp., distributors for the Nash Motors Corp. in New York state and northern Pennsylvania. He will have complete charge of the distribution of Jeffery and Nash passenger cars and trucks throughout the territory and will direct the service policy. Mr. Schiele has been in the automobile business for over 11 years, during which period he has been connected with the H. H. Franklin Manufacturing Co., the Willys-Overland Co. and the Nash Motors Co.

**Arthur P. Underhill**, one of the best known automobile men in New England and one of the founders of the Boston Automobile Dealers' Association, who for the past few years has been in the West, has returned to Boston to assume the general managership of the Chandler motors of New England. He recently purchased the interests in the firm of Edward Cleary. Mr. Underhill established one of the first motor car salesrooms in New England in 1899, as an agent for Knox cars. He became New England distributor for the Stearns car later. While engaged in the business he was associated with J. S. Hathaway, C. I. Campbell and others as an active worker in the various automobile shows and associations and his efforts were largely instrumental in developing the Boston Automobile Show into its present wide scope of influence.

**Harry R. Lock** has been appointed manager of the Buffalo branch of the Empire Rubber and Tire Co. to succeed R. H. Paddock, who has been transferred to the Boston branch as manager. W. K. Chadwick, who has been manager at Boston for many years, has been placed in charge of mechanical sales throughout the New England territory.

A. P. Underhill, General Manager Chandler Motors of New England.

J. S. Hathaway, President Boston Commercial Motor Vehicle Assn.

**C. A. Gilbert** has been appointed general sales manager of the Carlisle Cord Tires Company of New York. He was formerly western district manager of the United States Tire Company's interests on the Pacific coast and in the Far East. Mr. Gilbert has had wide experience in the rubber world. He was for four years branch manager of the Continental Caoutchouc Co., Chicago, and the next four years he was eastern district manager of the United States Tire Co.

**W. A. Hart** has joined the advertising staff of the Detroit Steel Products Co. as assistant advertising manager. For the past year Mr. Hart has been located in San Francisco, where he was western advertising manager for the Burroughs Co. He has made a special study of advertising from the outside view point, which will prove valuable to the company's customers in showing them the advantages of Detroit self-lubricated springs.

**Ralph E. Trout** is now with the Victor Motor Co., York, Pa. He was formerly director of purchases for the Pullman Motor Car Co. Mr. Trout will be in a similar position with the Victor company.

**Claiborne S. Williams** has succeeded Clarence L. Banks as manager of the Louisville branch of the Ford Motor Co. Mr. Williams was for some time assistant manager of the Memphis branch and later had charge of the Nashville office of the Ford company.

**B. J. MacMullen** has been made general manager of the Hudson Phillips Motor Car Co., St. Louis, Mo. Mr. MacMullen formerly sold White cars in New York City and later was with the Willys-Overland.

**Charles E. Stade** is now general sales manager of the Hydro-Eye Co., maker of the Hydro-Eye valve, which opened a new sales office at 1914-16 Broadway, New York City. The manufacturing and service departments are to be continued at 332 West 70th street.

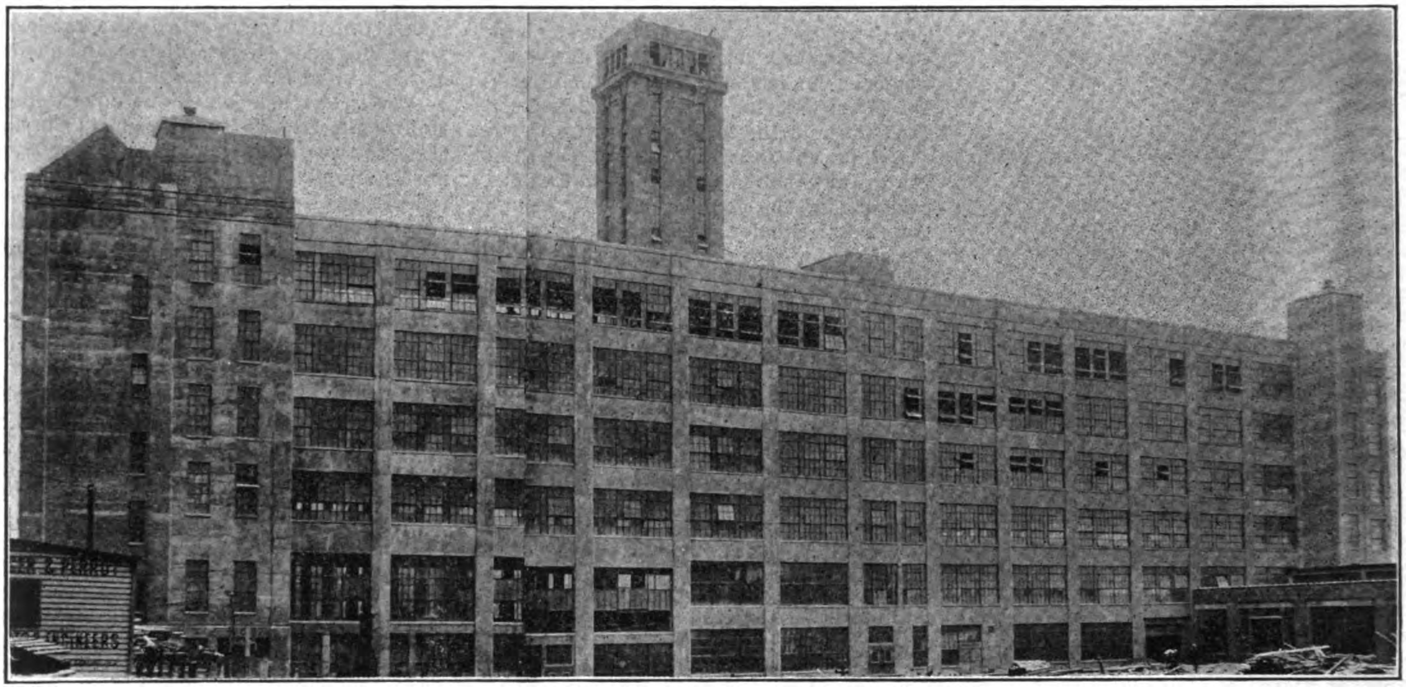
**Dwight S. Ritter** has been appointed purchasing agent of the Nordyke & Marmon Co., Indianapolis. He came to the Marmon plant five years ago from the Columbus Buggy Company, where he was purchasing agent.

**James D. Foster** has become general manager of the Cole Motor Sales Co., 326 Bond avenue, Grand Rapids, Mich. He has been connected with the industry for the past 10 years, having at one time been Cole agent in Flint.

**Nellie D. Prendergast**, who formerly had charge of the advertising and publicity departments of the Pathfinder Co., Indianapolis, Ind., has been appointed manager of advertising and publicity departments of the H. Barcroft White Corp., Syracuse, N. Y., car distributors.

U. S. WELCOMES THE REPUBLIC

Calls of Members to the Colors May Cause Disbandment of the Republic Motor Truck Employees' Band, Now Concluding a Trip Through the West.

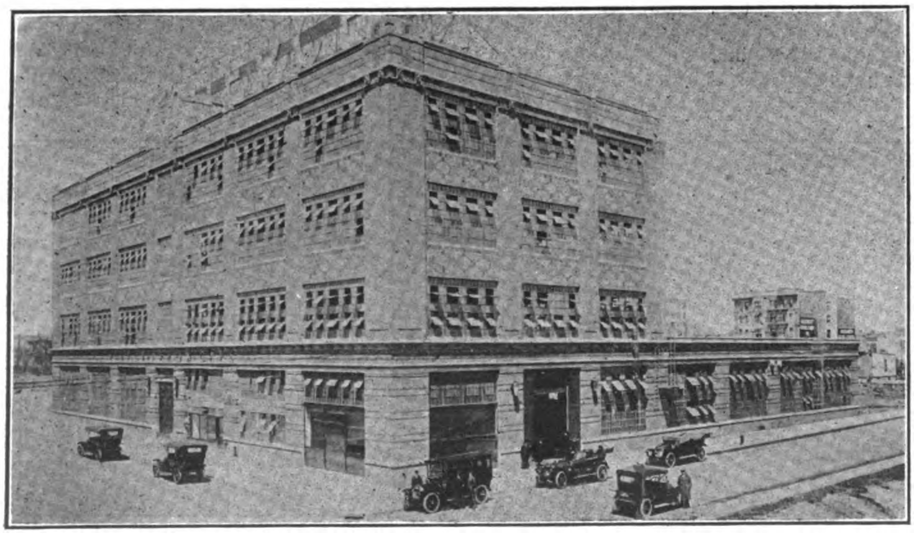


**Model Daylight Factory Recently Completed for the Use of the Stewart Speedometer Corp., in Long Island City, the Borough of Queens, New York City, Where a Commercial Survey Shows There Are 42 Automobile Manufacturing, Assembling, Service and Accessory Plants.**

# HAPPENINGS AMONG THE CAR AND PARTS MAKERS

## What Several of the Leading Manufacturers in the Motor Vehicle Industry and Allied Lines Are Doing or Have Under Consideration

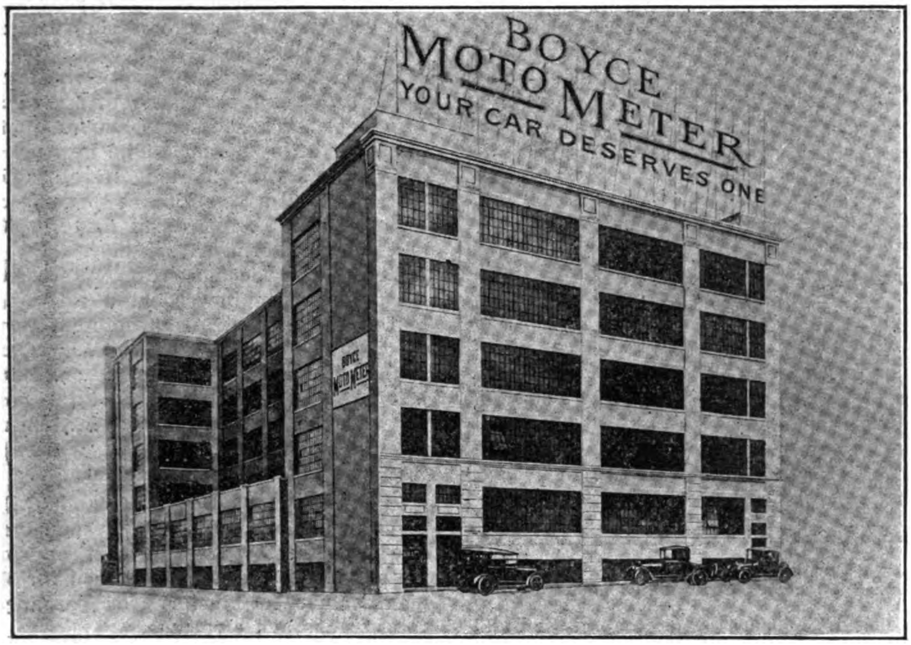
**The Stewart Warner Manufacturing Co.** is announced by the Chamber of Commerce of the Borough of Queens, New York City, as a recent addition to the list of automobile manufacturers in that growing automobile community, which comprises, according to the recent industrial survey by the latter organization, a total of 42 automobile plants, employing nearly 9000 persons in 1916 and showing value in product last year to the amount of $37,448,000. Nine-tenths of the sales of all classes of automobiles in New York City are made from the salesrooms along what is known as "Automobile Row," being that portion of Broadway from 45th street to 65th street, Manhattan, of which Columbus circle at 59th street can be said to be the centre. Fifty-ninth street runs directly over the East river via Queensboro bridge into Queens and is only a five or 10 minutes automobile run between any of the manufacturing plants and service stations in Queens and the sales centre in Manhattan.



**Harrolds Motor Car Co. (Pierce-Arrow), Service Station, Long Island City, Borough of Queens, an Establishment of 275 Employees.**

Manufacturers established in Queens, as listed, include the Packard Motor Car Co., the Ford Motor Car Co., the General Vehicle Co., Pierce-Arrow Co., Brewster & Co., Studebaker Corp., Simplex Motor Co., Rainier Motor Corp., Maxwell Motor Co., Renault Freres, Rolls-Royce and Transport Tractor Co.

Accessory manufacturers besides the Stewart Corp., makers of speedometers, are the following: American Ever Ready Co., batteries and electric equipment, flashlights; American Hard Rubber Co., rubber parts; Empire Art Metal Co., tubing; Brewster & Co., bodies; Humboldt Mfg. Co., miscellaneous parts; Piel Mfg. Co., horns, etc.; Metal Stamping Co., miscellaneous parts; Goodyear Tire and Rubber Co., tires, service; Prest-O-Lite Co., acetylene gas, storage batteries; Auto Specialty and Equipment Co., auto hardware; Fickling Enameling Co., enameling bodies; Moto-Meter Co., motometers; H. & N. Carburetor Co., gas and kerosene carburetors; Norma Co. of America, ball bearings; Anthony Machine Co., oil guns and pumps; Walton Body Co., bodies; Plaza Auto Top Co., tops; C. A. Willey Co., auto paint; Fahnestock Electric Co., electrical parts; Seubert Bearing Co., bearings; Astoria Wire Co., insulated wire; Kates Machine Works, valve tops; Queensboro Brass and Bronze Co., castings; Merrill Bros., drop forgings; Akron Tire Co., tire service; Cobal Mfg. Co., electrolitic copper articles; United Specialties Co., nickel



**New, Modern, Daylight Building of Moto-Meter Co., Manufacturers of Motometers, Established in Past Year in Long Island City, Borough of Queens, New York City.**

plates; Russell McGee Foundry Co., castings.

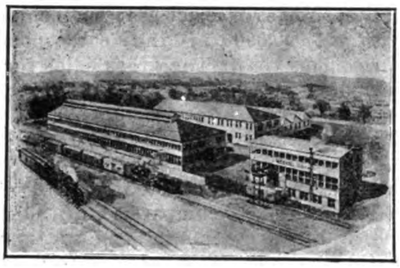
**The Troy Wagon Works,** Piqua, O., has received a contract from the French government for automobile trailers, making it necessary to operate the plant day and night for the next eight months.

**Gaston, Williams & Wigmore, Inc.,** have moved their offices from the Guarantee Trust building to the Equitable building, 120 Broadway, New York City.

**Brisk Blast Co.,** Monroe, Mich., has been incorporated for $200,000 for the purpose of manufacturing auto tire pumps and jacks. The St. Louis address has been discontinued and all business is now being conducted at Monroe.

**The Clark Equipment Co.,** Buchanan, Mich., is erecting an addition to its factory, which will be soon ready for occupancy. The company makes Bescoe steel wheels for trucks used in all the armies of the Allies.

**The National Cash Register Co.,** Dayton, O., has received a large order for airplane parts and will be employing about 6000 workers by September.



**Merrill Bros. Works, Drop Forgings, Long Island City, N. Y.**

**The Wolverine Motors,** Kalamazoo, Mich., has brought out the Speedway special selling at approximately $3000. The company has been recently formed to build high grade sport cars. The Speedway special will be built on a 115-inch chassis. The engine will be a four and have a maximum speed of 75 horsepower guaranteed. The radiator is a special racing V type, copper core. The axles used are the product of the American Ball Bearing Co. Other features include wire wheels equipped with 33 by 5-inch cord tires.

**The Triangle Truck Co.** has begun work on its new plant east of St. Johns, Mich., and expects to be in operation Nov. 1. The building is one-story brick, fireproof construction, 70 by 226 feet. The company will manufacture one and 1½-ton trucks and will have 40 men on its initial payroll.

**The Olds Motor Works,** Lansing, Mich., will erect a building to contain 64,000 square feet of floor space, 80 by 400 feet. The lower floor will be used for storage of materials and the upper floor will be given to the inspection and care of new cars. A new loading dock of 400 feet is added as a part of the new building.

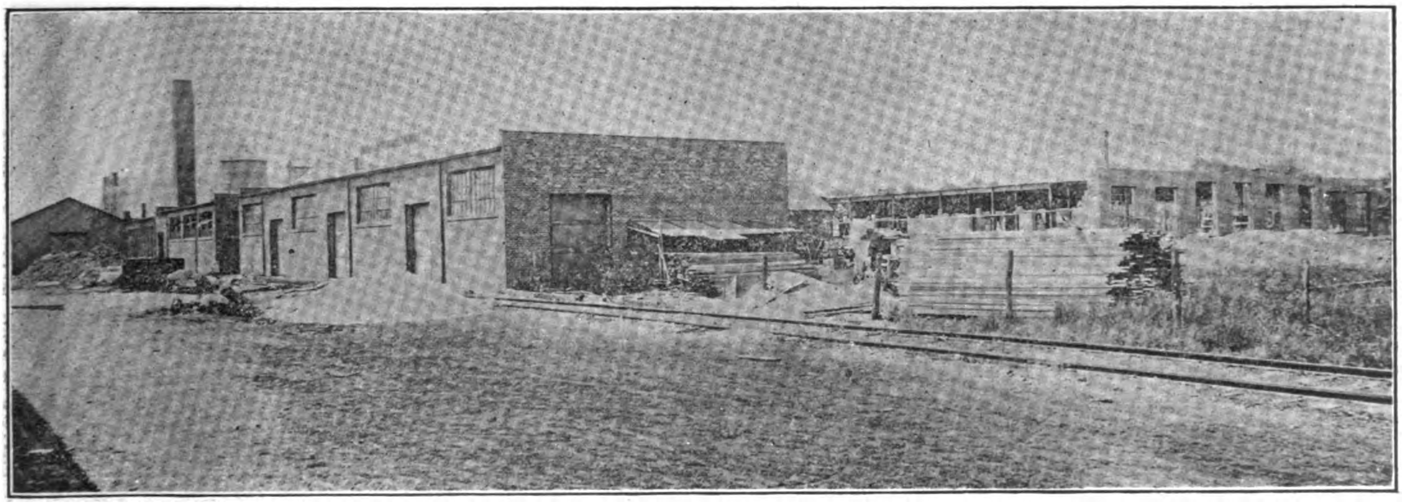
**The Saginaw Automobile Climb Out and Shovel Co.,** Saginaw, Mich., has been organized with a capital of $25,000. It will manufacture a device to help mired cars out of the mud. The officers are: President, S. H. Heginbottom; vice president, E. W. McFarren; secretary and treasurer, Andrew J. Ritchie, and general manager, C. N. Albee.

**The Michigan Tire and Rubber Co.,** Coldwater, Mich., will build a two-story 60 by 300 factory and also one of 60 by 60 feet. A total expenditure of about $60,000 is involved.

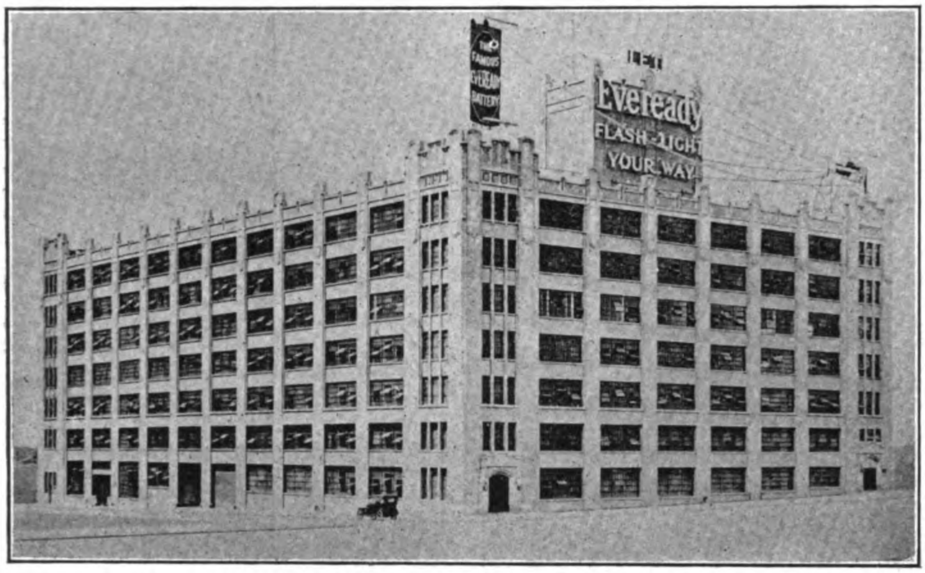
**The Light Cycle Co.,** Pottstown, Pa., is having plans prepared for extensions to its plant. The company manufactures castings and automobile parts.

**Turbo Carburetor Co.,** Milwaukee, Wis., has completed the work on the foundry and machine shop at 150 Clinton street. It was organized six months ago and manufactures engines.

**The Russel Motor Axle Co.,** Detroit, Mich., is erecting a one-story structure that gives 60 feet more width to the assembling plant for its entire depth of 1912 feet, while to the rear there is a further addition 120x120 feet, giving in all 26,000 additional square feet of floor space. The new addition will be used for doubling the capacity of the assembling plant and for housing new machinery received on their purchasing orders last spring. By November the company will have a capacity of 3000 to 4000 axles a month.



**Building Operations Now Under Way at the Russel Motor Axle Co., Detroit, Mich., Will Increase Capacity to 3000 to 4000 Axles a Month by November.**



American Ever Ready Works, Long Island City, Borough of Queens, N. Y., Employing 1600 Workers in Manufacture of Batteries, Electric Equipment, Flashlights.

**The Motor Parts Co.**, 818 North Broad street., Philadelphia, Pa., has signed a contract with the Westinghouse Electric and Manufacturing Co. for the sole selling rights on their Ford starting and lighting equipment. The territory will be redistributed with agents and distributors.

**The Prest-O-Lite Co., Inc.**, Indianapolis, Ind., appointed several battery service stations and are as follows: Oscar Peterson, 2634 Milwaukee avenue, Chicago, Ill.; Budett Oxygen Co. of Texas, 23rd and Janes street, Fort Worth, Tex.; E. M. Service, Lindsay, Cal.; Shelbyville Garage and Repair Co., 708 Main street, Shelbyville, Ky.

**The McGraw Tire and Rubber Co.**, East Palestine, O., gathered together all the branch and district managers for the annual sales conference. During the meetings the sales policies were carefully discussed, preparatory to announcing the 1918 sales campaign. Increased warehouse facilities were arranged for at important distributing centres in view of adequately taking care of the greatly increased demands for McGraw, Pullman, Imperial and Congress tires and tubes.

**The Cole Motor Car Co.**, Indianapolis, Ind., has announced that on and after Sept. 1 that all the models of Cole cars will be advanced in price. This is made necessary on account of the increased cost of material. The following cars will be affected by the increase of price: Seven-passenger Cole "8" touring car, four-passenger Cole "8" roadster, four-passenger Cole Springfield tourcoupe, seven-passenger four-door toursedan. Cars purchased on or before Sept. 1 can be purchased at the present prices.

**The Defiance Machine Works**, Defiance, O., has increased its capitalization from $600,000 to $1,200,000 to expand in the automotive field. The company manufactures wood working machinery. Several new concrete brick buildings will be erected.

**The Malbohm Wagon Co.**, Racine, Wis., which has been building motor cars for more than a year, has reincorporated under the laws of Maine with a capital stock of $500,000. The company is building 10,000 sporting roadster type cars annually.

**The B. F. Goodrich Co.**, Akron, O., for the first six months of this year reports net earnings of $5,200,000 as compared with $4,800,000 in the corresponding period last year. The gross sales for the period are estimated at $85,000,000 as compared with a total of $70,990,782 during the first six months of 1916.

**The General Motors Co.** for the 11 months ending June 30 report earnings of $28,750,000 as compared with $24,862,198 in the same period ending June 30 last year. The gross sales were approximately $185,750,000, as compared with $145,159,746 last year. The profits for the 12 months are estimated at $30,000,000. The sales of cars and trucks for the period totaled 169,415, as against 121,113 in 1916.

**The J. W. Murray Mfg. Co.**, Detroit, Mich., in its balance sheet as of June 1 this year, shows current assets of $623,499; current liabilities of $247,849, and net working capital of $375,650. Sales for the first six months of this year were $954,000, on which there is shown a net profit of $108,000.

**United States Motor Truck Co.**, Cincinnati, O., has increased the prices of all its models. This was on account of the high cost of production. The new prices are as follows: 2½-ton drive, $2650; 3½-ton chain drive, $3350; 2½-ton worm drive, $2950; 3½-ton worm drive, $3650, and five-ton worm drive, $4550.

**The Affa Specialty Co.**, Worcester, Mass., has been incorporated to engage in the manufacture of automobile parts. Its capital stock is $5000. The company has hired manufacturing space on Southbridge street. The officers of the company are: President, Walter I. Stearns; vice president and treasurer, Walter S. Graffam; clerk, Charles B. Rugg.

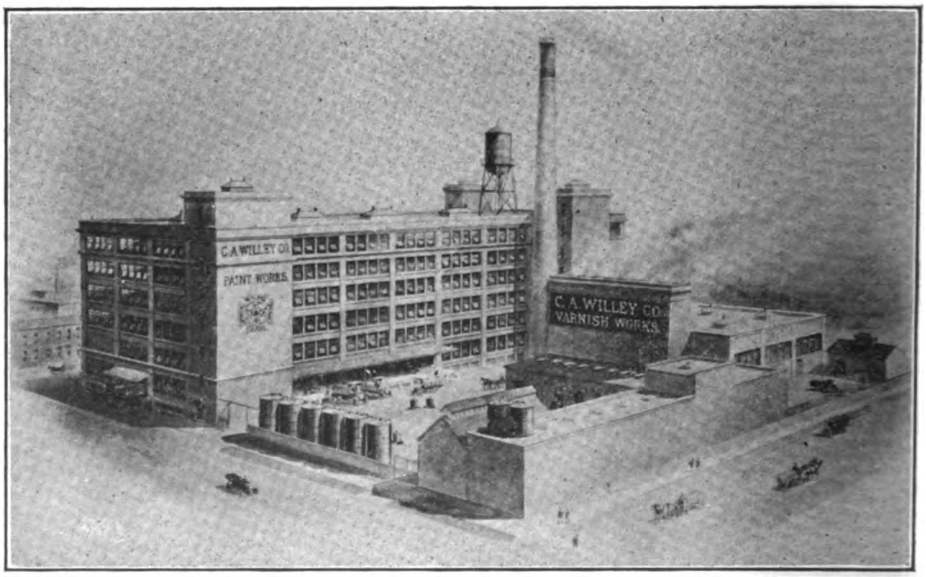
**The Lang Body Co.**, Cleveland, O., is erecting a plant on Lorain avenue on a five-acre tract. It will cost approximately $100,000 and will be used for the manufacture of bodies for passenger cars, trucks and airplanes.

**The Lee Tire and Rubber Co.**, Conshohocken, Penn., will move its executive offices to New York City and will also establish a branch to be used as the central service station for the New York and New England territory. It is expected that all branches of the executive end of the business will be established in New York by the last of September.

**The Hobbs Storage Battery Co.**, Los Angeles, Cal., has been incorporated with a capital of $100,000 and will manufacture storage batteries designed by A. A. Hobbs, president of the company.

**The Hess Pontiac Spring and Axle Co.**, Pontiac, Mich., will erect two additional factory units in the fall, the first to cost $15,000 and to be one story in height and 60 by 150 feet.

**The White Co.**, Cleveland, O., has commenced excavations for a $300,000 addition to its factory. The building is to be 125 by 500 feet, concrete and steel construction, part one story and part two story with basement.



Factories of the C. A. Willey Co., Manufacturers of Automobile Paint and Coach Colors, a Queens Borough Pioneer Industry, Established in 1880.

# FOR CHICAGO ACCESSORIES SHOW

## First Ford Exposition Will Have Three Hundred Booths Exhibiting Car Fitments

By H. V. BUELOW.

FOR the first time since the honk of the motor horn was heard throughout the land and the village constable proudly assumed the duties of the traffic cop, automobile accessories will hold the centre of the motoring stage the last week in September and have a coming-out party all their own when the first annual national exposition of Ford accessories will be held in the Chicago Coliseum, the show opening on Saturday, the 22nd, and closing on the following Saturday after a seven-day run.

Although originally intended for the display of fitments for Ford cars almost exclusively, the impending innovation of the automobile show world has since lost much of its homogeneous character and has gradually become an exposition for all manner of accessories for all makes of cars. The old order is changing it seems, and the vogue of the combined automobile and accessory shows, staged in all the large cities of the United States each winter, is passing.

In staging the September exhibition of Ford fitments the promoters hold to the belief that there is room for two shows, one for automobiles and another for accessories, and that the time has come when the two should be segregated. There is no exposition building in the United States large enough to display both motor cars and accessories at the same time to advantage, and because of this lack of space the accessory manufacturer has suffered in the past. At the automobile show his product has been the added attraction. Motor cars have been the headliners and given stellar honors. A show exclusively for accessories seems to be the logical remedy for such an unfair and unsatisfactory condition.

At least this is the contention of the men who are sponsors for the Ford accessory show and their stand has been indorsed by the accessory manufacturers, jobbers and dealers. The success of the September exposition is already assured. Contracts have been closed for the 300 exhibition booths—all that can be built on the main floor of the Chicago Coliseum—and the leading accessory houses of the United States and Canada have signified their intention of sending representatives to the exposition. Requests for 250,000 complimentary tickets, made by jobbers, dealers and Ford owners, have been honored by the management to date and there is not a city or town of Rand-McNally consequence in the country in which the call to the monster meeting of the Ford clan has not been sounded.

The time and place of the Ford accessory show, as well as the purpose of the exposition, are considered ideal. The September date makes it possible for Ford owners throughout the middle west to tour to Chicago, since weather conditions during the first month of autumn prompt motorists to answer the call of the open road, and gives the accessory jobbers an opportunity to look over the offerings of the manufacturers and make their selections for the trade in ample time to catalogue goods before starting the January drive for new year business.

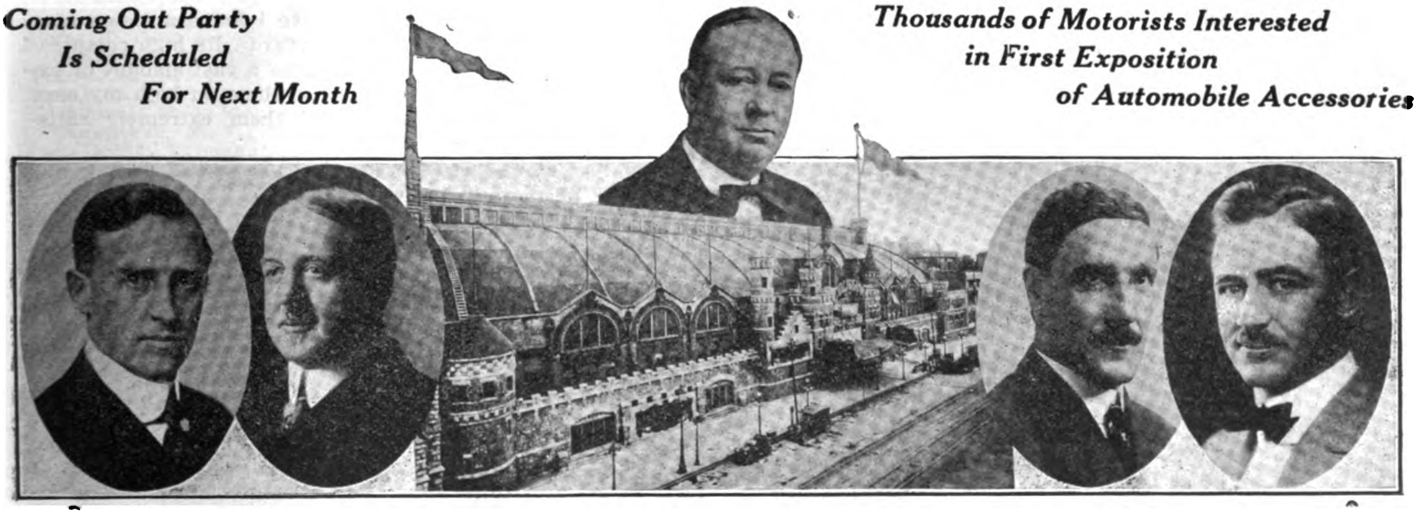
The central location of Chicago and the excellent accommodations that the second largest city in the country offers to the visitors should swell the attendance records. The Illinois metropolis is the centre of the richest territory in the United States for the sale of Ford cars and Ford accessories. In Illinois and the seven adjacent states—Indiana, Iowa, Michigan, Minnesota, Missouri, Ohio and Wisconsin—there are a total of 528,000 Ford owners, or more than one-third of the 1,325,250 motorists in the United States that drive that make of car.

For the convenience and help of this mighty legion of motorists, H. V. Buelow, general manager of the Ford accessory show, has established a touring bureau which will send out route data and road information to any prospective visitor to the September exposition.

The exhibitors at the Ford accessory show includes the following companies:

The Reliance Co., Chicago; Perry Auto Lock Co., Chicago; Mechanical Belt Co., St. Joseph, Mo.; Grant Wire Wheel Co., Chicago; Crum-Wiley Co., Peru, Ind.; Detroit Auto Products Co., Detroit, Mich.; Maltby Auto Specialty Co., Detroit, Mich.; Sinclair Refining Co., Chicago; Simplex Manufacturing Co., Anderson, Ind.; Graham Brothers, Evansville, Ind.; Essenkay Products Co., Chicago; Ahlberg Bearing Co., Chicago; K-D Lamp Co., Cincinnati; Ton-A-Ford Truck Co., Racine, Wis.; Bailey Non-Stall Differential Corp., Chicago; Advance Auto Accessories Corp., Chicago; Wire Wheel Corp. of America, Buffalo, N. Y.; H. and D. Lock Co., Aurora, Ill.; Metal Specialties Co., Chicago; W. H. Howell Co., Geneva, Ill.; Sprague Manufacturing Co., Omaha, Neb.; United States Auto Supply Co., Chicago; Schlesinger-Redburn Co., New York; the Kerosene Burning Carburetor Co., Detroit, Mich.; Pennsylvania Rubber Co., Jeannette, Pa.; A. Nelson Manufacturing Co., Chicago; Hudford Truck Co., Chicago; the Zinke Co., Chicago; Redden Truck Co., Chicago; Guaranty Motor Truck Co., Cambridge, Mass.; American Machine Products Co., Marshalltown, Ia.; U. S. Auto Supply Co., Chicago, and the Axelford Truck Co., Chicago.

In addition to these exhibitors the following manufacturers will be represented



*Coming Out Party Is Scheduled For Next Month*

*Thousands of Motorists Interested in First Exposition of Automobile Accessories*

**Officers of the National Exposition for Ford Accessories and the Coliseum, Chicago, Where the Same Will Be Held Sept. 22-29. On the Left: President, J. E. Duffield, General Manager and Treasurer Bailey Non-Stall Differential Co.; Vice President, Charles Johnson, General Sales Manager Maltby Auto Specialties Co., Detroit, Mich. Centre, H. V. Buelow, General Manager of Exposition. On the Right, Treasurer B. L. Gray, Gray-Heath Co., Chicago, Ill.; Second Vice President, H. S. Irving, Vice President Advance Auto Accessories Corp.**

by the Gray-Heath Co. of Chicago, which has reserved 14 booths: Bell Automatic Spark Retarder Co., New York; L. P. Halladay Co., Streator, Ill.; Motometer Co., New York; Reflex Ignition Co., Cleveland; X Laboratories Co., Boston; Beaverdam Overall Co., Beaverdam, Wis.; Outlook Co., Cleveland; Anthony Co., Long Island City, N. Y.; New York Coil Co., New York; Ball-Thompson Co., Hartford, Conn.; Continental Piston Ring Co., Detroit; N. A Petry Co., Philadelphia; Hanson Manufacturing Co., Cleveland; Barcolo Manufacturing Co., Buffalo, N. Y., and Standard Speedometer Co., Boston.

The products of the Heinzelman Brothers Carriage Co., Bellville, Ill.; Auto Accessories Co., Baltimore, Md.; Ekern Brothers Manufacturing Co., Flandreau, S. D., and the Props-Dunn Motor Co. of Muncie, Ind., will be displayed in the space reserved by the H. C. Paro Co. of Chicago.

Automobile schools have been invited to participate in the Ford accessory show and the Coliseum Annex has been set aside exclusively for their educational demonstrations. There will be no exhibits in the balcony and basements of the Coliseum, these portions of the huge exposition building being used for promenade, lounging and smoking rooms and places of entertainments.

The national colors and American flags will be the feature of the show decorations, the work being in charge of the leading festival decorator in the United States.

# Substitute for Ford Magneto Lighting

Every Ford owner having a car equipped with lights run from current generated by the magneto knows just what happens when the engine is throttled down. The lights diminish so that they emit but a faint glow. To obviate this difficulty the Detroit Starter Co. of Detroit has designed a system known as Genolite (six volt), type H, for the price of $38.85.

The system consists of a generator, a storage battery, all necessary wiring and a switch control for attachment to the steering column. The generator is of the square type, mounted on a steel bracket, and is easily attached to the engine. The output is regulated and controlled by means of a specially designed regulator.

The battery is a three-cell, 40 ampere-hour capacity, six volt output, capable of operating not only the head and tail lamps, but can be used in connection with the ignition system as well.

The control switch is located on the steering column and is designed so that the lamps can be brightened, dimmed or turned off. An improved headlight bulb (two of which are included with the system) accomplishes this high-low principle, being fitted with two filaments.

The makers claim that not only is this system most economical, but also in every respect equal in service value to the lighting systems found on the high priced cars.

## MINERVA MOTORS ADOPTS PIERCE GOVERNORS.

R. A. Rothermel, manager of the London office of the Pierce Governor Co., Anderson, Ind., has informed the officials of the company that the Minerva Motors Co., Ltd., of Amsterdam, has adopted Pierce governors as standard equipment on their motor trucks and lorries. The Minerva Motors Co. is one of the largest and best known manufacturers in Europe. They will install about 5000 governors during the coming year.

## OLDFIELD MAKES NEW WORLD'S DIRT TRACK RECORD.

Barney Oldfield, driving his new freak speed car, the "Golden Bug," established a new set of world's dirt track records from one to 50 miles at St. Louis. Many of the records that he broke had stood for years. The records are as follows:

| | New Record | Old Record |
|---|---|---|
| 1 mile | 00:45:00 | 00:46:20 |
| 5 miles | 3:53:60 | 4:06:58 |
| 10 miles | 7:56:20 | 8:16:40 |
| 15 miles | 12:00:08 | 12:23:20 |
| 20 miles | 15:52:02 | 16:25:60 |
| 25 miles | 19:57:60 | 20:28:80 |
| 50 miles | 40:47:06 | 40:57:80 |

At the conclusion of the run, Oldfield, when told of the records he had made, made the following statement:

"It is a vindication of my theory that American made speed cars are better than the foreign made brands. My new car is in every way a home product. It was designed and built by Harry Miller and equipped with Harvard piston rings, made by the Harvard Manufacturing Co., 3939 Magnolia avenue, St. Louis, Mo. Never before have I found a piston ring equal to the Harvard. Its high compression certainly gives a vast amount of extra power. I use them on both my cars and have found them extremely satisfactory."

# Some Late, Novel Touring Specialties

Trunk manufacturers have taken away from touring many unpleasant features for those who feel the lack of ordinary conveniences when entour, by supplying means of carrying a complete wardrobe and maintaining it in good condition, as well as supplying cases equipped with culinary articles and supplies that make possible the serving of excellent lunches and meals conveniently and attractively.

One of the most efficient and complete wardrobe trunk outfits is specially designed for motor tourists and carries sufficient apparel and dressing articles to meet the needs of every occasion. They are so arranged that the clothing is kept in presentable condition and it does not become jumbled up and disarranged as it would if packed in the ordinary trunk or case.

An extremely compact dining outfit is also in the market, which not only contains table wear, plates and dishes for a touring party, but also compartments for keeping the edibles for a long period in exactly the same condition as when prepared.

Isn't This Icy-Hot Motor Restaurant One of the Very Best Reasons for Going on a Picnic? It Is Complete in Every Detail and Keeps the Food in the Exact Condition in Which It Is Prepared.

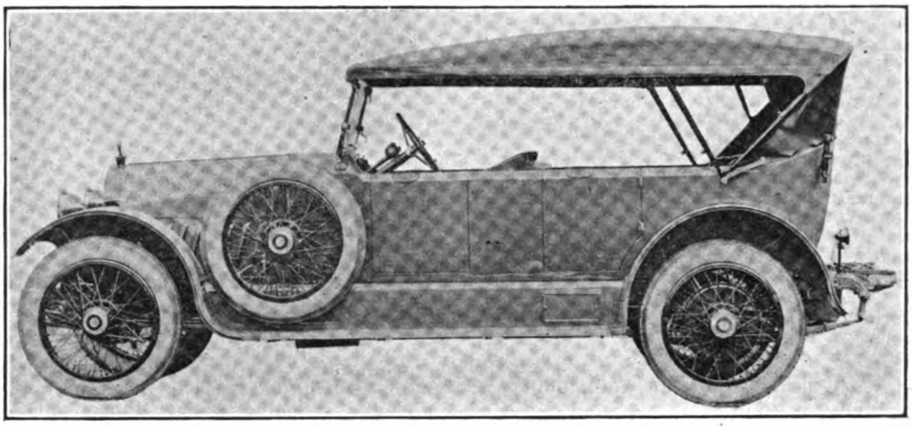
(Courtesy Icy-Hot Bottle Co., Cincinnati, O.)

Now That the Manufacturers of Trunks Have Turned Their Attention to the Motor Woman's Needs There Is No Reason Why Milady Mobile Cannot Be Properly Clothed for Any Occasion When on a Tour. The Belber Trunks Give a Maximum of Comfort With a Minimum of Space.

(Courtesy Belber Mfg. Co., Philadelphia, Pa.)

# *McFarlan Six Type 127 Specifications*

**Made by the McFarlan Motors Co., Connersville, Ind., producers of high powered, six-cylinder motor cars of great dependability and correct design. The regular type 127 here shown is priced at $3500. The firm makes a specialty of special body designs and practically any type of body can be had, mounted on the McFarlan 90 chassis.**



**The MacFarlan Seven-Passenger Touring Car of Which a Complete Technical Description Is Given in the Automobile Journal, Aug. 10, 1917.**

**Engine, Teetor, six-cylinder.**
**Bore and stroke, 4½x6 inches.**
**H. P., S. A. E., 48.60.**
**Carburetor, Stromberg.**
**Ignition, battery and magneto.**
**Lubrication, force and splash.**
**Radiator, honeycomb.**
**Clutch, dry disc.**
**Transmission, sliding gear, selective.**
**Rear axle, full floating.**
**Brakes, internal and external on wheels.**
**Steering gear, worm and sector type.**
**Wheelbase, 136 inches.**
**Tires, cord, 35x5.**

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# NEW CONCERNS RECENTLY INCORPORATED.

## Monthly Record of New Business Houses for which Charters Have Been Issued In the Various States and Classified According To Nature of Business.

### Newly Organized Manufacturers of Cars

**Dover, Del.;** Aerial Rotary Engine Co.; $5,000,000; to design, manufacture and sell automobile engines and airplanes; J. B. Bailey, L. B. Phillips.

**Dover, Del.;** The Pathfinder Motor Co. of America; $2,000,000; to manufacture automobiles, motors, motor trucks, engines; C. L. Rimlinger, H. L. Mullin, Clement M. Enger.

**Dover, Del.;** Southwest Oakland Co.; $100,000; to manufacture motor vehicles; L. B. Phillips, J. B. Bailey.

**Newark, N. J.;** Foley Motor Car Co.; $25,000; to manufacture motor cars and parts; E. J. and F. P. Foley, Montclair; Peter A. Bannigan, Paterson.

**Buffalo, N. Y.;** Transcontinental Motor Truck Corp.; $250,000; to manufacture automobiles, motor boats; E. S. Stengel, R. A. Schmidt, P. J. Bloxham.

**Chappaqua, N. Y.;** Chappaqua Garage, Inc.; $5000; to manufacture and deal in automobiles; P. Jensen, S. Jensen, D. Connelly.

**Dauville, N. Y.;** Moore Motor Vehicle Co.; $100,000; to manufacture and sell motor vehicles.

**Dover, N. Y.;** The Dittenhoffer Tube and Rubber Co.; $1,000,000; to manufacture automobiles, tires and tubing of all kinds.

**Georgetown, N. Y.;** National Tractor Co.; $2,500,000; to manufacture tractors and tractor parts.

**New York, N. Y.;** Delmore Mfg. Co., Inc.; $500,000; to manufacture automobiles and accessories; E. V. Van Voorheis, E. C. Londergren, R. Henry, Jr.

**New York, N. Y.;** Herman Motor Truck Co., Inc.; $25,000; to manufacture automobiles; Eugene P. Herman, Walter A. Schott, Abraham Beck.

**Canton, O.;** American Motor Car Co.; $100,000; to manufacture motor cars; Clyde A. Volter, Wm. E. Patterson, Adolph S. Vance, Jacob M. Glaser, Motitz Glaser.

**Fremont, O.;** Taylor Motor Truck Co.; $1,000,000; to manufacture motor trucks; R. E. Taylor, Robert J. Willoughhby, E. M. Sheehan, L. A. DeRan, E. H. Weinhardt.

**Philadelphia, Pa.;** Willys-Overland, Inc.; $50,000; to manufacture and sell automobiles; E. R. Hansell, J. Vernon Pimm, C. Seymour.

### Accessories, Equipment and Supplies.

**Dover, Del.;** Electric Auto-Lite Corp.; $10,000,000; to manufacture engines and electrical devices; C. L. Rimlinger, H. L. Munn, D. L. Clement, M. Enger.

**Jacksonville, Fla.;** Peninsula Metal Co.; $52,000; to deal in automobile accessories.

**Chicago, Ill.;** Efficiency Auto Supply Co.; $2500; Otto C. Bruhlman, Herbert Mayer, Elmer Engquist.

**Plainfield, Ind.;** Quaker Oil Co.; $50,000; to manufacture oils, paints, automobile equipment; General F. Calbert, Robert G. Edwards, Frank M. Calbert.

**New York, N. Y.;** Magic Auto Devices Co., Inc.; $5000; to conduct an automobile supply business; M. Kinney, E. Haberstrom, L. Haberstrom.

**Rochester, N. Y.;** Automobile Service Association of New York State, Inc.; $100,000; selling service to all persons engaged in operating, using and manufacturing all kinds of motor vehicles; H. Barnard, C. N. Denniston, G. F. Mosher.

**Syracuse, N. Y.;** The Security Tire and Rubber Co.; $100,000; to manufacture auto tires, tubes and accessories; F. D. Burchill, G. J. Quay, J. A. Gloger.

**Jersey City, N. J.;** Lehigh Rubber Co.; $25,000; to manufacture automobile tires, tubes and shoes.

**Akron, O.;** Avalon Rubber Mfg. Co.; $50,000; T. S. Briggle, L. B. Turner, W. W. Spears, J. F. Hower, G. H. Laumann.

**Providence, R. I.;** The Bliss Co-Operative Auto Supply Co.; $10,000; Samuel Waldman, Albert Bliss, Maurice W. Bliss.

**Dallas, Tex.;** American Motor Co.; $50,000; to deal in merchandise, agricultural implements and farm products; H. M. Russel, W. R. Harris, J. Hart Willis.

**Houston, Tex.;** Double Mileage Tire Co.; $5000; J. N. Bolton, H. H. Rankin, F. H. Spiller.

### Dealers In Automobiles and Motor Trucks.

**New Britain, Conn.;** W. F. Keeley Automobile Co.; $10,000; to engage in automobiles; William F. Keeley, Anna Ruth Siderowfsky, Mrs. Thomas K. Keeley.

**Danville, Ill.;** Moore Motor Vehicle Co.: $100,000; A. C. Leonard, Louis Plott, Walter T. Gunn.

**Streator, Ill.;** Cadillac Automobile Co.: $2500; Charles H. Williams, W. H. Boys, E. M. Griggs.

**Evansville, Ind.;** Lincoln Motor Co.; $20,000; to buy and sell automobiles, motor vehicles, tractors and airplanes; J. W. Walton, H. F. Fenneman, Julius Rastatter, P. B. Fellwock, W. E. Fellwock, Edward Holtz.

**Sioux City, Ia.;** Barish Brothers Motor Co.; $25,000; to deal in automobiles.

**Salina, Kan.;** Simpson Hoffman Motor Co.; $15,000; H. C. Simpson, Jr., C. N. Hoffman, F. P. Worsely.

**Cynthiana, Ky.;** Harrison County Motor Car Co.; $20,000; to deal in automobiles; Edgar Gragg.

**Hopkinsville, Ky.;** The Duffer-Cox Motor Co.; $3000; to do a general business in automobiles and accessories and to operate a garage; C. A. Cox, G. N. Duffer, Ralph E. Lewis.

**Lexington, Ky.;** Mammoth Motor Car Co.; $30,000; Brooks Taylor, J. C. Taylor, J. J. Taylor.

**Lewiston, Me.;** E. P. Weeks Co.; $10,000: to engage in automobile and other vehicle business; Willard A. Richardson, president.

**West Springfield, Mass.;** Clark Motor Truck Sales Co.; $30,000; Charles D. Clark, Jr., president and treasurer; Alice Lewis Clark.

**Kansas City, Mo.;** Packard Kansas City Motor Car Co.; $45,000; to deal in automobiles and accessories; W. J. Parrish, E. D. Taylor, W. H. Pettyjohn.

**Grand Rapids, Mich.;** Samason Trailer Co.; $150,000; Frank C. Hulswit, D. A. Warner.

**Valentine, Neb.;** Valentine Auto Co.; $7500; to deal in automobiles.

**Albany, N. Y.;** Baltic Motor Car Co.; $7000; to sell automobiles; J. J. Barthelneh, Albert P. Hahn, Weldon H. Fair, Chester H. Zinkon, B. O. Burkey.

**Brooklyn, N. Y.;** The Bay Ridge Electrical Co.; $5000; to deal in automobiles and motor business; D. F. MacDonald, A. M. Stagg, J. E. Warner.

**Kiamesha, N. Y.;** Brooklyn Auto Wrecking Co., Inc.; $5000; to conduct an automobile business; I. Lipp, N. I. Slutsky, A. Lepman.

**New York, N. Y.;** Allied Automobile Distributors, Inc.; $10,000; to deal in motor cars and accessories; Samuel L. Simon, Paul Simon, Paul M. Simon.

**New York, N. Y.;** Joseph A. Atwell, Inc.; $50,000; to deal in automobiles and motors; Walter W. Westall, Chester A. Slocum, Margaret F. Tilman.

**New York, N. Y.;** The Fisk & Hein Co., Inc.; $50,000; to deal in automobiles; C. A. Fisk, A. Hein.

**New York, N. Y.;** Fordham Auto Sales Corp.; $600; to deal in automobiles and boats; Edward W. Gillice, Ernest Damiane, Albert D. Phelps.

**Port Chester, N. Y.;** Flint Motor Sales Co., Inc.; $10,000; to conduct an automobile and garage business; C. H. Flint, G. M. Flint, C. J. Schmaling and H. H. Berry.

**West New York, N. J.;** The Hudson Auto Co., 624 Hudson avenue; $10,000; Henry Simon, David Simon.

**Cincinnati, O.;** The Towle Cadillac Co., 1106 Race street; $120,000; Edgar Menderson.

**Dayton, O.;** Preferred Motor Car Co.; $10,000; to sell automobile trucks; A. V. Cannon, O. O. Vrooman, H. O. Mierke, R. T. Kelsey, Herbert A. Spring.

**East Liverpool, O.;** The Liberty Motor Sales Co.; $10,000; to deal in automobiles; H. C. Fox.

**Massilon, O.;** Canal Street Motor Car Co.; $25,000; George B. McClellan, W. B. Fryer.

**Massilon, O.;** Massilon Developing Co.; $5000; to make and sell automobiles; Grace A. Snyder, S. Bert Hankins, Mary R. Yoke, Charles E. Nickles, Carl N. Nickles.

**Zanesville, O.;** The Zanesville Motor Car Co.; $10,000; to deal in automobiles; R. G. Farmer.

**New Healdton, Okla.;** Fleet Cooper Auto Co.; $20,000; Tom Cooper, Fleet Cooper and L. C. Bell.

**Connellsville, Pa.;** Cochran Porter Motor Co.; $5000; C. G. Cochran, Jr., treasurer.

**Sisseton, S. D.;** The Carlberg Co.; $30,000; to deal in automobiles.

**Clarksburg, W. Va.;** The Clarksburg Tire Co.; $25,000; to deal in automobiles, trucks and accessories; Wade H. Garrett, Ira D. Starkey, Henrietta Garrett, Freda D. Starkey, Agnes Garrett.

**Wheeling, W. Va.;** Hopkins Motor Co.; $10,000; to deal in motor vehicles and accessories; George E. and Elliott B. Hopkins, W. S. Irwin, Joseph B. Curl, M. G. Teeman.

## Parts and Fittings Makers Incorporated

**Huntsville, Ala.;** The Quick-McLain Machine Gun Co.; $30,000; to manufacture gasoline machine guns; Robert McLain and Will Quick are the inventors.

**Oakland, Cal.;** Pacific Nash Motor Co.; $100,000; W. G. Dandy, Walter N. Gabriel, E. H. Maier, F. W. Cooper, J. K. Durrill.

**New Haven, Conn.;** Automobile Consumers, Inc.; $10,000; Charles J. Martin, Morris Gurian, Isador Resnick, Julius Mardez, Harry Hoyt.

**Dover, Del.;** American Industrial Corp.; $20,000,000; to acquire patents on automobiles and develop same; M. H. Morris, A. M. Halloran, S. A. Williams.

**Dover, Del.;** National Synthetic Rubber and Tire Co.; $1,000,000; to manufacture tires for automobiles; A. W. Britton, S. B. Howard, John A. Moore.

**Dover, Del.;** Turcor Mfg. Co.; $300,000; to manufacture axles, gears and other parts of automobiles.

**Wilmington, Del.;** American Industrial Corp.; $20,000,000; to acquire patents on automobiles and other things and to develop same.

**Chicago, Ill.;** Morse Motor Sales Co.; $10,000; Nathan S. Barnett, Albert N. Powell, Alfred Bayes.

**Louisville, Ky.;** Haynes Motor Sales Co.; $10,000; Charles Tway, W. S. McDonold, Milton Lavely.

**Springfield, Mass.;** Springfield Carburetor Co., Inc.; $500,000; to deal in automobiles, carburetors and accessories; Anton C. Schmeizer, George H. Morganstern, Frank W. Arthur, Nathan P. Avery.

**Worcester, Mass.;** Silver Auto Parts Co.; $3000; Joseph Silver, Abraham Silver, Dora Silver.

**Charlevoix, Mich.;** The Young High Velocity Carburetor Co.; $250,000; to manufacture automobile supplies.

**St. Louis, Mo.;** The Mueck Auto Body Co.; $3000; to do a general body business; Frank J. Mueck, Henry J. Happel, William Happel.

**Albany, N. Y.;** Super-Diesel Tractor Corp.; $10,000; to manufacture mechanical and agricultural machinery; E. A. Rumley, C. A. Lewis, R. A. Budd.

**New York, N. Y.;** Auto Ride Easy Co., Inc.; $10,000; to deal in motor devices; I. E. Nordstrom, H. A. Sandberg, I. E. Kettle.

**New York, N. Y.;** Columbia Motor Corp.; $250,000; to engage in the manufacture of engines and boilers; C. S. Ashley, J. S. Galland, H. J. Neuschafer.

**New York, N. Y.;** Longuemare Motor Devices Co., Inc.; $25,000; to manufacture carburetors, motors, machinery and equipment; B. Happ, P. D. Saxe, I. Mosson.

**New York, N. Y.;** Miller-Morris Corp.; $52,500; to manufacture auto carburetors and accessories; G. Miller, T A. Morris, H. C. Harris.

**New York, N. Y.;** R. B. V. Motor Sales Co., Inc.; $5000; to manufacture motors, engines and automobile supplies; J. J. Brady, Jr., F. X. Riley, D. L. Brady.

**New York, N. Y.;** Sandow New York Sales Co.; $10,000; to manufacture motors, machinery and engines; John T. McGovern, Morris E. Kinnan, William W. Opperman.

**New York, N. Y.;** Warren-Nash Corp.; $78,750; to deal in motors and machinery; Alburn E. Skinner, Charles B. Warren, John J. Jansen, Jr.

**Schenectady, N. Y.;** Standard Automobile Radiator Co.; to deal in automobile radiators; Minnie Grayzel, Jacob Simon.

**Akron, O.;** The J. W. Davis Motor Sales Co.; $2500; J. W. Davis, C. Davis, J. H. Davis, W. J. Lonergan, James H. Webber.

**Cleveland, O.;** Hale-Green Co.; $10,000; to sell parts; H. C. Hale, O. V. Greene, James H. Griswold, John A. Hadden, R. S. Douglas.

**Toledo, O.;** The J. & J. Auto Top Co.; $10,000; John P. Kams, John R. Galpin, Edgar V. Kams, August Scherff, Alpheus M. Kern.

**Tulsa, Okla.;** Seepit Motor Sales Co.; $5000; J. A. Secumde, G. E. Pitts, C. K. Barber.

**Pt. Arthur, Tex.;** Pt. Arthur Auto Sales Co.; $20,000; E. P. Baker, Geo. T. Craig, E. A. Mullin, C. T. Baker.

**Milwaukee, Wis.;** Northwestern Battery Co.; $40,000; W. H. Cameron, Chester B. Pierce, J. H. Gugler.

## Garages and Repair Shops Newly Chartered

**Jacksonville, Fla.;** Tourist Garage; $5000; W. C. Johnson, Mabel Williams, A. N. Dobbins.

**Joliet, Ill.;** The Auto Clearing House; $15,000; to repair automobiles and sell used cars; William Theiler, Thomas E. Rayan, Lewis V. Gray.

**Shepherdsville, Ky.;** Gatton Garage Co.; $2100; C. C. Daugherty, Frank Goldsmith, Charles Morrison.

**Clovis, N. M.;** The Quick Service Garage; $8000; L. King, R. R. Bridges, B. H. Oxford.

**Roswell, N. M.;** Roswell Overland Co.; $30,000; to conduct a general garage.

**Akron, O.;** The Electric Motor and Repair Co.; $10,000; S. W. Sweet, Henry Kish, R. S. Whitright, W. A. Heffelman, Maude Chamberlain.

**Alliance, O.;** Alliance Armature and Motor Repair Co.; $10,000; W. G. Richards.

**Clyde, O.;** Dixie Garage Co.; $25,000; W. A. Roush, H. M. Humphryes, L. C. Roush, T. V. Parker, Sylvester Smith.

**Ft. Worth, Tex.;** Brewton Garage and Auto Co.; $25,000; to conduct an auto garage.

**Lamont, Wash.;** Lamont Garage; $5000; John Kelly, Russell Blair.

**India Offers a Big Field for Automobiles, According to Foreign Trade Experts. There Are About 15,000 Cars in India Now, with American Makes Leading in Numbers, and Its Potential Market Is 150,000 for the British Provinces, with an Additional 40,000 for the Native States and Agencies. The Photograph Shows Several Overlands in the Railway Workshops in Bombay, Where a Shipment of 400 of These Cars Was Recently Converted Into Light Motor Lorries for Military Use. The Military Authorities Commandeered Hundreds of Cars of Various American Makes and Transformed Them for Haulage When the Demand for Lorries Became Serious in India, Giving Good Service Throughout India, Africa, Mesopotamia and Aden.**

# NEW BUSINESS CONCERNS AND CHANGES OF NAMES.

## The Month's Record of Transfer of Ownerships and Opening of Garages, Agencies, Branches, Service Stations and Repair Shops.

### Recent Transfers of Business Ownerships.

**Conway, Ark.;** C. E. Douglas & Co. has sold his garage and repair shop to W. M. Harrell & Co.

**Anaheim, Cal.;** S. R. Walter has taken over the Anaheim vulcanizing works.

**Bardolph, Ill.;** Edward Collins is successor to H. E. Williams Garage.

**Kankakee, Ill.;** Libby & Schultz of the Big Four Garage have dissolved partnership. Mr. Libby has retired and he is succeeded by L. L. Soucie.

**Vinton, Ia.;** F. F. Wagner has sold his interest in the Vinton Tire and Battery Co. to H. E. Wells.

**Lucas, Kan.;** The Rathburn Garage has been purchased by Vernon Maupin.

**Westmoreland, Kan.;** R. R. Kersey has purchased the garage formerly owned by E. J. Roberts.

**Wichita, Kan.;** Charles Martin has purchased a garage.

**Monroe, Mich.;** Charles O'Lone is successor to O'Lone & Heinrich Garage.

**Kansas City, Mo.;** Bush-Motor Car Co. has dissolved partnership. W. H. Morgan will continue at 1508 Grand avenue and R. R. Mr. Bush will continue at 1526 Grand avenue.

**Unionville, Mo.;** Woodruff & Harris are successors to Harry Livzey. They will conduct a garage and do repairing.

**Morristown, Minn.;** Elmer Madson has bought an interest of Carl Kisor in the City Garage.

**Fairbury, O.;** Claude Snyder has purchased his partner's interest in the firm of Snyder & Friesen, automobile dealers.

**Frederick, Okla.;** A. L. Burnham has purchased the Maxwell repair shop formerly operated by J. N. Davis.

**Ladonia, Tex.;** King Brothers are successors to W. D. Bridges, who will conduct a garage.

**Chippewa Falls, Wis;** Frank Lowater has purchased the garage formerly operated by Charles Denner.

**Santa Anna, Tex.;** W. T. Mitchell is successor to the City Garage.

### New Business Locations and Removals.

**Birmingham, Ala.;** Walthour Motorcycle, 214-22 First street, is now located at the above address. It was formerly located at 1714 Third avenue.

**San Francisco, Cal.;** McQuay-Norris Mfg. Co., Hobart building, is now located at 1660 Pine street.

**Atlanta, Ga.;** The Studebaker Corp. has removed from Marietta street to 316-318 Peachtree street. This was made necessary in order to make room for its used car department.

**Aurora, Ill.;** Frank J. Fidler has moved to new quarters at 16 North La Salle street; he was formerly located at 17 Water street. The new building affords more space for displaying of cars.

**Indianapolis, Ind.;** Little Giant Sales Co., 7 Pembroke Arcade, is now located at 1005 E. 50th street.

**Davenport, Ia.;** The Tobin Truck and Transfer Co., formerly located at Burlington, Ia., has moved to Davenport. The company handles the Smith Form-A-Truck. The salesroom and office is located at 117 Brady street.

**Des Moines, Ia.;** The D. & S. Motor Co., distributor of the KisselKar and the Detroit electric, has moved to its new quarters at 923 Locust street.

**Belleville, Kan.;** F. W. Simmons, operating an automobile tire shop, has removed to larger quarters, which has been erected on Main street. New equipment is being added to the new service station.

**Eskridge, Kan.;** Pard Haskins has moved into his garage on East Section street.

**Eureka, Kan.;** Hermanson & Green have removed to Seventh and D streets. The company handles the Maxwell.

**Bangor, Me.;** The E. E. Wentworth Corp. has moved into its new quarters on post-office square. The company is the local distributor of Overland cars.

**Portland, Me.;** Walker Street Garage, 7-9 Walker street, has moved to 32 Shueman street.

**Baltimore, Md.;** The Star Motor Co., distributor for Grant and Bour Davis cars, is now established in its new home at 13 North High street.

**Brockton, Mass.;** Fisher-Nickerson is now located at 73 Glenwood street. The company was formerly located at 52 High street.

**New Bedford, Mass.;** New Bedford Auto Co. has moved to 42 Plymouth street. The company was formerly located at 270 Hawthorne street.

**Detroit, Mich.;** Jones Major Motor Co. has moved from 74 Sproat street to 566 Winewood street.

**Grand Rapids, Mich.;** Robert Willey Auto Co., Wealthy avenue and Charles street, has moved to 333 East avenue, S. E.

**Traverse City, Mich.;** The Hines Motor Co. has moved to 546 Drexel avenue, Detroit, Mich.

**St. Louis, Mo.;** The Weber Implement and Automobile Co. has moved to the new three-story building at 21st and Pine streets. The new quarters will be used as a car sales and storage room, as well as for shop work.

**Jersey City, N. J.;** Columbia Garage, 258 Ocean avenue, has moved to 255 Ocean avenue.

**Newark, N. J.;** National Auto Supply Co., 261 Halsey street, has moved to 185 Water street.

**Binghamton, N. Y.;** N. Y. Sales Co., 192 Water street, has moved to 34 State street.

**Binghamton, N. Y.;** White Agency, 184 State street, is now located at 30 Collier street.

**Buffalo, N. Y.;** Diamond T Motor Truck, 80 Terrace, has moved to 63 Terrace.

**Buffalo, N. Y.;** Martin Auto Supply Co. has removed to 379 Washington street. The company was formerly located at 721 Main street.

**Utica, N. Y.;** Electric Garage Co., 75 Cornelia street, has moved to 845 Francis street.

**Akron, O.;** Wert & Weaver, 360 Wooster avenue, has moved to 317-319 Water street.

**Cincinnati, O.;** Split Hickory Wheel and Top Co., 1100 Sycamore street, has moved from 1194 Sycamore to the above address.

**Cleveland, O.;** Empire Tire Co., 1919 Euclid avenue, has moved to 725 Superior avenue.

**Cleveland, O.;** Imperial Automobile Co., 2025 Euclid avenue, has moved to 1025 East 13th street.

**Kenton, O.;** The Kenton Sales Co. has moved into a larger plant in order to cope with its rapidly increasing business. The springs manufactured by the company are used in converting Ford cars into trucks.

**London, O.;** The London Vulcanizing Co. has removed to the room vacated by the London Times and will now occupy both rooms.

**Cleveland, O.;** H. & G. Motor Co., 1824 Euclid avenue, has moved to 1463 East 105th street.

**Toledo, O.;** Jameson Brothers Motor Co., 224 Huron street, has moved to 2829 Collingwood avenue.

**Monongahela, Pa.;** Aubin Auto Co., 409 Coal street, has moved to Jeannette, Pa.

**Providence, R. I.;** Metz Co., 209 Broad street, has moved to 225 Orchard street, East Providence.

**Providence, R. I.;** Thomas Carbon Remover Co., 86 Broadway, has moved to 9 Benevolent.

**Milwaukee, Wis.;** Rotler's Garage, Linus and Williams streets, has moved to 657 Superior street.

**Milwaukee, Wis.;** D. A. Walsh & Co., 322-24 E. North avenue, has moved to 424 15th street.

### Factories, Garages and Repair Shops.

**Washington, D. C.;** Sall Brothers has opened a new accessory store at 1022 14th street. In addition to handling a complete line of automobile accessories, Keystone tires will also be carried.

**Valdosta, Ga.;** The Valdosta Garage Co. has erected a modern garage.

**Sterling, Ill.;** The Superior Motor Car Co. has opened a new salesroom on Locust street. The room is being remodeled and will be up to date in every way.

**Des Moines, Ia.;** The Savage Tire Sales Co. has opened a sales office at 1322 Grand avenue.

**Villisca, Ia.;** The Oliver Motor Co. plans to install a repair shop with W. H. Griggs in charge.

**Shenandoah, Ia.;** Raymond & Haase, located at Thomas and Blossom streets, have been appointed to give service on Prest-O-Lite storage batteries.

**Lowell, Mass.;** James M. Ranger and Victor Pigeon have occupied a fireproof cement garage. It will be known as the Chelmsford Garage and will carry a full line of parts and accessories.

**Hagerstown, Md.;** Samuel B. Haines of 26 W. Antietam street has opened a Prest-O-Lite service station.

**Cambridge, Mass.;** The Eureka Co., Inc., has opened a modern garage and service station at 26 Green street.

**Detroit, Mich.;** The Kessler Motor Co. has opened for business at 275 Manila avenue.

**Detroit, Mich.;** Leonard J. Moeller, Olympian distributor, has opened a salesroom at 1581 Woodward avenue. The sales organization will be headed by F. E. Hollister, manager, and William F. Breil as assistant manager.

**Minneapolis, Minn.;** Standard Oil Co. has opened a filling station at 227 Second avenue S.

**Wamamingo, Minn.;** Carl Helleckson has opened a new tire repair shop.

**St. Louis, Mo.;** The Universal Tire and Rubber Co., with headquarters at 3216 Locust street, has been made exclusive distributors for the Standard Four Tire.

**Verona, Mo.;** Voelpel & Scriba has opened a garage and is now ready for business.

**Read Point, Mont.;** The Yellowstone Trail Garage has opened for business.

**Manchester, N. H.;** Roy A. Barnes has secured the local agency for Dann inserts.

**Stillwater, Okla.;** Greiner Brothers has established an automobile repair and vulcanizing shop.

**Tulsa, Okla.;** The Western Auto Supply Co. has established a branch store and service station.

**Butler, Pa.;** Chambers Garage and Welding Co., Etna street, has been appointed to give service on Prest-O-Lite storage batteries.

**Ft. Worth, Tex.;** Fred Castleberry, 911 Commerce street, has opened a garage.

# AGENCIES RECENTLY APPOINTED.

## Add to and Correct Your Mailing List of Pleasure Car and Other Dealers—Symbol * Indicates Commercial Vehicle. † Electric Vehicle.

### ALABAMA.

**Birmingham**—Stearns-Knight, H. M. Bailey, 2022 Fifth Ave.

### ARIZONA.

**Tucson**—KisselKar, J. H. Boyd.

### ARKANSAS.

**Little Rock**—Briscoe, Lenon Auto Co., 414-16 Center St.
Moon, Lenon Auto Co., 414-16 Center St.

### CALIFORNIA.

**Culver City**—National, Culver City Garage.
Oakland, Culver City Garage.
*Chase, Culver City Garage.
**Huntington Park**—Chevrolet, C. W. Webb.
Grant, C. W. Webb.
**Los Angeles**—Jones, The Price Auto Co.
**Monrovia**—Stearns-Knight, Beardsley Garage, S. Myrtle Ave.
**San Francisco**—Apperson, Martin M. Hartmann.
*Commerce, John F. McLain Co.
**Whittier**—Maxwell, W. J. Long.
Oakland, Howard E. Rees.

### COLORADO.

**Ft. Collins**—Stearns-Knight, W. G. Christie.
**Greely**—KisselKar, Homer J. Lee.
KisselKar, Packard Sales Co.
**Greenville**—KisselKar, Jack Moore (King & Moore).
**Idaho Springs**—KisselKar, E. R. Plummer.
**Montrose**—KisselKar, J. F. Wilson.

### CONNECTICUT.

**New Haven**—Olympian, A. Mairoanq.

### GEORGIA.

**Savannah**—Harroun, Atlantic Motor Co.
Dort, Van-Johnson Motor Co.
Premier, Van-Johnson Motor Co.

### ILLINOIS.

**Aledo**—Overland, The Aledo Velie Sales Co., Stevenson block.
Velie, The Aledo Velie Sales Co., Stevenson block.
**East St. Louis**—Grant, The St. Clair Motor Sales Co., Fifth St. & Illinois Ave.
Mitchell, The St. Clair Motor Sales Co., Fifth St. & Illinois Ave.
**Elliot**—Ford, W. A. Kreitzer.
**Englewood**—Dodge, Charles G. Staat, 7813 Halsted St.
Jordan, Charles G. Staat, 7813 Halsted St.
Reo, Charles G. Staat, 7813 Halsted St.
**Evanston**—Chevrolet, G. G. Ladd, 810 Church St.
**Joliet**—Hupmobile, Will County Motor Co., Van Buren and Joliet Sts.
Jordan, Will County Motor Co., Van Buren and Joliet Sts.
**Lincoln**—Oldsmobile, Frank Wundele.
**Oak Park**—Buick, F. M. Miller.
**Rockford**—*Redden, The Wilcox Auto Co., 123 N. Court St.
**St. Louis**—Grant, The St. Clair Motor Sales Co., 500 State St.
Mitchell, The St. Clair Motor Sales Co., 500 State St.

### INDIANA.

**Ft. Wayne**—Franklin, Ideal Automobile Sales Co.
Haynes, Ideal Automobile Sales Co.
Maxwell, Ideal Automobile Sales Co.
Oakland, Ideal Automobile Sales Co.
**Indianapolis**—Wood's Dual Power, The Indiana Battery Service Co.
*Dearborn, the Hooser Truck Co., 1336 East Washington St.
**South Bend**—Maxwell, the Smith Rausch Motor Sales Co., 100 Lincoln way.

### IOWA.

**Cedar Rapids**—Dodge Brothers, D. H. Lenmead.
Seneca, Ely Garage.
**Coal Valley**—Studebaker, Krapp & Lees.
**Independence**—Maxwell, H. B. Gill.
**Wilton**—Buick, A. Mastens (Wilton Garage).

### KANSAS.

**Burlington**—Grant, W. C. Arthur.
**Dundee**—Jones, Orr & Esfeld.
**Leavenworth**—Velie, Randel Motor Co.
**Joplin**—Interstate, J. W. Leetenberger.
Liberty, J. W. Leetenberger.
**Oskaloosa**—Ford, I. Cumming.

### KENTUCKY.

**Paducah**—Hudson, Choate & Meonton, Sixth and Jefferson Sts.

### LOUISIANA.

**New Orleans**—Locomobile, M. Zellberman.
Premier, Sherrouse Steel Motor Car Co.
*Armleder, Louis Veglia, 614-18 North Rampart St.

### MASSACHUSETTS.

**Allston**—Jordan, The Sturtevant Motor Co., Inc., Packard Annex.
*Gramm-Bernstein, The Sturtevant Motor Co., Inc., Packard Annex.
**Boston**—*Koehler, The Vim Boston Co.
**Lynn**—Hudson, Silbey, Robbins & Sawyer, 166 Broad St.
**Springfield**—*Velie, Bunker-Bancroft Co.
*Rainier, Bunker-Bancroft Co.
**Worcester**—Maxwell, The Henley-Kimbell Co.

### MICHIGAN.

**Benton Harbor**—Hudson, Alden E. Stover (Elm Street Garage).
Oakland, Alden E. Stover (Elm Street Garage).
**Detroit**—Yale Eight, The J. A. Thiele Motor Sale Co.
Jordan, Charles E. Riker, Woodward Ave.
**Grand Rapids**—*Republic, The Burtess Motor Sales Co.
*Roamer, The Western Michigan Paige Co., 214 Ionia Ave.
**Harrisville**—Dodge, Chris Yockey & Sons.
**Kalamazoo**—*Lane, Don M. Harris & Co.
*United, Don M. Harris & Co.
†Ward Electric, Don M. Harris & Co.
**Lansing**—Overland, F. A. Roethlisberger.
Willys-Knight, F. A. Roethlisberger.
**Marcellus**—Oakland, City Garage.
**Saginaw**—Olympian, D. T. Packer.
**Sault Ste. Marie**—Overland, Soo Machine and Auto Co.
**Union City**—Buick, Cox Garage.

### MINNESOTA.

**St. Paul**—Chandler, Benjamin F. Powers Auto Co., 47 W. Fourth St.

### MISSOURI.

**Caruthersville**—KisselKar, The Berkshire-Walters Motor Co.
**Columbia**—KisselKar, John N. Taylor.
**Hannibal**—KisselKar, Harry Rutherford Motor Car Co.
**Wright City**—KisselKar, Golterman Auto Co.

### NEBRASKA.

**Benkelman**—Chevrolet, A. L. Moores and J. C. Ough.
Hudson, A. L. Moores and J. C. Ough.
Patterson, A. L. Moores and J. C. Ough.

### NEW YORK.

**New York**—Olympian, Robert Lurie & Co.

### OHIO.

**Cincinnati**—Olympian, Olympian Motor Sales Co.
**Cleveland**—Olympian, Allis Motor Car Co.
**Columbus**—Olympian, The White Motor Sales Co.
**Dayton**—Davis, Stutz Motorment, 36 W. Second St.
*Indiana, The Maxfer Auto Sales Co.
**Steubenville**—KisselKar, McHugh & Cole.
**Toledo**—Willys-Knight, The Simons Sales Co.
Overland, The Simons Sales Co.
**Youngstown**—**Olympian,** Briska Motor Sales Co.

### OKLAHOMA.

**Enid**—Marion Handley, The Norris Motor Car Co.
**Oklahoma**—Fiat, J M. Partick.
Pilot, J. M. Partick.
**Tulsa**—Hal, The Empire Motor Sales Co.
**Vinta**—Marion-Handley, L. R. Tyson.

### OREGON.

**Portland**—Chambers, The Western Motor Car Sales Co.
Liberty, Mitchell-Wallingford.
Premier, Mitchell-Wallingford.

### PENNSYLVANIA.

**Philadelphia**—Columbus "6," G. W. Reinbold.
Marion-Handley, G. W. Reinbold.
**Pittsburgh**—Pilot, The Auto Truck Co., Centre and Euclid Ave.
American "6," Weldon Motor Car Co., 5811 Penn Ave.
*Brockway, Brockway Motor Truck Co., 3949 Senate St.
*G. M. C., Weller Co., 4048 Jenkins Arcade building.
*Sanford, Pittsburgh Paige Co.
**Wilkinsburg**—Scripps-Booth, E. Reed Johnston Motor Co., 522 Penn Ave.
*Sanford, Paige Detroit Co.

### SOUTH DAKOTA.

**Sioux Falls**—Oakland, L. W. King Automobile Co.

### TEXAS.

**Dallas**—*Packard, Wadley-Morris Motors Co.
**Haskell**—Chevrolet, Shelton-Bishop Co.
**Tyler**—Marion-Handley, B. J. Albritton.
Saxon, B. J. Albritton.

### VIRGINIA.

**Richmond**—*Union, Ford Truck, Southern Auto Repair Co.

### WASHINGTON.

**Spokane**—Franklin, Rantz & Halstead.
*Kelly-Springfield, A. Leslie Alexander.

### WEST VIRGINIA.

**Fairmont**—KisselKar, C. S. Holt.

### WISCONSIN.

**Fond Du Lac**—Maxwell, Kerr-Kemier Motor Co., 13 East First St.
**Lancaster**—Maxwell, The Monitor Auto Co.
**Marshfield**—Buick, R. S. Barnard, McMullan building.
**Milwaukee**—Saxon, Jack Butler, 52 Water St.
Premier, Jack Butler, 52 Water St.
**Richland Centre**—KisselKar, J. C. McCorkle.

### WYOMING.

**Hanna**—KisselKar, I. E. Tolliver.

## TELLING HOW TO TREAT THE FRIENDLY TOUCH.

A little booklet issued by an automobile accessory manufacturer, the Black & Decker Manufacturing Company, Baltimore, Md., does more than serve as a reminder that the American language owes much of its expressiveness to the nicely shaded meanings of popular words. It makes its point through a very striking title—"The Friendly Touch." This little booklet deals with the problem of feeling friendly when a man is burning your electricity—using your air compressor; they point out the value of a gracious mental attitude.

In other words, they emphasize the thought that the garageman and tire station man should not feel "touchy" when a gasoline customer takes the profit out of his sale and makes it an apparent loss. But, they argue, it is best to remain friendly at this apparent injustice, looking at it from the broad light of service; to promote further business on profitable sales or repairs. This is an easy matter if the cost is trifling, but it is likely to loom big in the garageman's mind if he knows his air service is expensive.

The booklet is sent free upon request and every establishment furnishing or using compressed air will find much of interest in its 24 pages, where the Black & Decker Manufacturing Company's complete line of Lectroflater Air Compressors and Portable Electric Drills is shown and also views of their Baltimore plant.

# *A Year's Progress in Tractors*

## Developments Noted in Automotive Farm Plows at the Fremont, Neb., Field Show

THE Fremont tractor demonstration, in which 46 manufacturers exhibited their machines in action at Fremont, Neb., during the week of Aug. 5-10, did not prove as big a drawing card as similar demonstrations have been in years past. Inclement weather restricted the attendance and the operation of the machines. Those in attendance, however, had an exceptionally good opportunity to inspect the leading machines manufactured in this country and note the tendency of tractor development for the past year.

In past years the Implement and Vehicle Association, under whose auspices the demonstration was held, have held their trials at different points in the country, but it was decided to hold only one this year and carry out the operations on an enlarged scale at Fremont. A large tract of land, 3000 acres in area, outside the city of Fremont, was used as a show grounds and demonstration field. Large circus tents were used to house the machines, equipment and crews and odd and picturesque advertising banners and symbolical trade marks set up about the grounds gave the show a carnival aspect.

All machines in operation bore placards displaying the name of the tractor and in most cases also that of the maker with facts concerning the motor, fuel used, etc. The demonstrations were not of a spectacular character, the machines going on the job at allotted periods and performing their work with little fuss or trouble. The trials are not in the nature of a contest, but just to demonstrate the work that the tractor can perform for the farmer.

The show took on international importance from the viewpoint of agricultural development, as many European and South American countries had representatives present in addition to the several prominent men who represented the United States. Arnold P. Yerkes of the Bureau of Farm Management of the Department of Agriculture, Howard E. Coffin, chairman of Aircraft Production Board, Council of National Defense, and Juan Homs, commercial agent of the Department of Commerce, were present as representatives of the United States. The British government had no official representative present, but Blake Ozias, manager of F. S. Bennett, Ltd., London, Eng., prominent importers of cars and machinery, and J. Constant of Toronto, Canada, were present during the demonstrations. Lieut. Paul Mittine, head of the Public Works Department of the French Purchasing Commission, was present as representative of the French government, and the Russian government was represented by General Baldin of the technical department of that government. There were also a large number of automobile and parts manufacturers who attended to study the tractor and several hundred well known engineers. The latter were present also to attend the several meetings of the S. A. E., which were held during the week. President George W. Dunham of the society, Howard E. Coffin, A. P. Yerkes, William Clark, chief engineer of the Wilcox-Bennett Carburetor Co., and Dent Parrett, president of the Parrett Tractor Co., were the speakers.

Great interest was shown in Howard Coffin's address, in which he urged more rapid progress in standardization work in the tractor industry and the interchange of patent rights for the benefit of the entire business. In the latter connection he stated that the production of a poorly designed or poorly constructed tractor reacted upon the whole industry, as when it got into the farmer's hands with consequent dissatisfaction, it would lead the purchaser to condemn all tractors.

In referring to the aeronautical work now underway, he made general reference to the new United States aviation motor that had been developed. He stated that the motor weighed only 1¾ pounds per horsepower and was seven times as powerful, although only one-third as heavy as a tractor engine. He stated that the government would spend from $800,000,000 to $900,000,000 for aircraft this year.

President Dunham opened the meeting of the society and dwelt upon the tremendous impetus the industry had received through America's entrance into the war and how the tractor in turn had done wonderful work in producing the big crops needed in the war situation. He advocated competitive test for tractors.

Mr. Yerkes, who is connected with the Department of Agriculture, Bureau of Farm Management, laid emphasis on the service problem and a paper by Dent Parrett was on the topic, "Tractor Service." William Clark, who spoke on burning kerosene in internal combustion engines, urged manufacturers not to be afraid to make changes in designs and thereby obtain more satisfactory results.

# TRADE INFORMATION EXCHANGE

## A National Clearing House for the Trade's Needs

### GASOLINE PLEASURE CARS.

**Pt. Arthur, Tex.;** Pt. Arthur Auto Sales Co. is anxious to secure gasoline pleasure cars; selling price, $750 to $2000.

### GASOLINE COMMERCIAL CARS.

**Pt. Arthur, Tex.;** Pt. Arthur Auto Sales Co. is interested in commercial vehicles; selling price, $750 to $2000.

### MOTORCYCLE AGENCY.

**Allouez, Mich.;** John Kline is desirous of securing the agency for motorcycles; selling price, $200 to $325.

### SPECIAL OPPORTUNITY.

**Allouez, Mich.;** John Kline would consider the agency for the Chevrolet, Auburn and Pathfinder in the territories of Michigan, Hoton, Keweenan and Baraga counties.

### ACCESSORIES AND EQUIPMENT.

**Allouez, Mich.;** John Kline is in the market for air compressors, anti-rattlers, autogenous welding equipment, axles, bearings, belts, bodies, bolts, brakes, bumpers, cable, carburetors, cases, cements, chains, charging apparatus, clutches, coils, collars, commutators, cones, connectors, controllers, cranes, cylinder machines, cylinders, discs, drills, elevators, engines, fire extinguishers, gasoline, gear cutting machines, gears, generators, goggles, graphite, grinders, greases, guns, headlights, horns, ignition, jacks, lathes, machinery, magnetos, maps, mechanical starters, motors, nuts, oils, paints, patches, pinions, pins, pistons, platinum, plugs, polishes, printed matter, punches, purifiers, races, racks, radiators, reamers, rectifiers, removers (carbon), scrapers, searchlights, seats, shafting, shapers, shims, solder, speedometers, spokes, springs, starters, steel steering wheels, steps, storage systems, tape, tire accessories, tires, tools, tops and parts, transmission, trimmings, turntables, upholstery, valves, vulcanizers, waste, wheels, whistles, windshield, wire, wrenches and special bodies for pleasure and commercial cars.

**Sherburn, Minn.;** Colvin Brothers are interested in air compressors, autogenous welding equipment, batteries, bodies, bumpers, caps, curtains, doors, dynamos, fenders, gasoline, paints, pistons, seats, shock absorbers, trimmings, vulcanizers, wheels (wire), windshields.

**Lincoln, Neb.;** Nebraska Oldsmobile Co. would like to secure air pumps, batteries, bulbs, bumpers, cements, chains (non-skid), charging apparatus, drills, emblems, fire extinguishers, gaskets, gauges (air pressure), goggles, guns, hammers, heaters, hydrometers, jacks, locks, meters, measuring instruments, patches, plugs, polishes, pullers (wheel), pumps (wire), ratchet drills, reamers, shims, shock absorbers, soaps, sockets, solder, tire accessories, tools, trunks, washers, waste, wrenches.

**Clyde, O.;** Dixie Garage Co. is desirous of securing air compressors, air pumps, anvils, arbor presses, cabinets, dynamos, engines (gas), hoists, machinery, shafting, tools, washers. The products are to be used for garage equipment.

**Marion, S. D.;** Hieb Brothers want information regarding air tanks and curb gas outfits.

**Pt. Arthur, Tex.;** Pt. Arthur Auto Sales Co. is interested in anti-rattlers, asbestos batteries, bolts, brushes, bumpers, clamps, elevators, gaskets, greases, horns, hose, hydrometers, jacks, leather, lubricators, maps, mufflers, nuts, oils, packing, paints, patches, pins, pistons, platinum, plugs, polishes, removers (carbon), rubber, springs, storage systems, testers, tire accessories, tires, tools, valves, varnishes, vulcanizers, washers, washstands, wire, wrenches. The products are to be used for stock.

# *Plans of Dealers Organization*

## New England Sponsors in N. A. D. A. Declare For Cooperation With The Manufacturers

Some facts about the newly formed National Automobile Dealers' Association were given out recently by Vice President J. H. MacAlman and Director John H. Johnson who, with F. E. Wing and Chester I. Campbell represented Boston. What they said indicates that the new organization can be a power for good in the motor industry.

First of all they wish to have it understood that it is not the plan of the association to assume an antagonistic attitude toward the manufacturers of motor cars. An impression prevailed that the body was going to be a sort of organization that would dictate to the makers the allowance to dealers, the form of contracts, etc.

Another idea that seemed to gain ground in Chicago was that the dealers should take over the two big national shows at New York and Chicago. There were other things said that might infer the association was going to carry a chip on its shoulder. So it was natural that some makers felt antagonistic to it.

Mr. MacAlman and Mr. Johnson have no such dreams about the power that can be welded. They realize that working with the makers much good for the industry as a whole may be accomplished; working against them both sides are bound to suffer. In other words, the Boston men wish it to be understood that they never will favor any policy of trying to adjust any matters with a club in each hand.

At the present time the bylaws call for the election of dealers to membership through local organizations. Theoretically that sounds good. Practically it is another matter. If the association waits for the dealers everywhere to organize to become eligible for membership it will have a long wait and then not get so many.

On the other hand if the association changed its bylaws so that every dealer might become a member it would get hundreds of live men all over the country.

Take Massachusetts as an example. There is a strong dealers' organization in Boston. Worcester has another. The dealers in the other cities are not organized. And it will be a long time before they bother about it. Until they do they are not eligible for membership. As a result many prominent men are sure to be lost to the association who might be secured right away. What is true of Massachusetts is true of every state in the Union.

There are about 27,000 dealers in the United States. Under the plan in force now the new association will be fortunate to get 10 per cent. of them. In Massachusetts today there are more than 100,000 motorists registered, yet there are only about 2000 members in the Massachusetts State A. A., the body representing here the American Automobile Association.

In Massachusetts now we have 2275 dealers registered with the highway commission. The Boston and Worcester associations total about 200 dealers, or less than 10 per cent. eligible to join the national organization.

In losing all the other 2000 men there is sure to be a weakening of the effectiveness of the big organization along the lines it is planning to work, such as legislation. The meeting in Chicago was evolved as a result of dealers going to Washington to fight the five per cent. tax, and now it proposes to make legislation, national, state and municipal its big object.

While that sounds good, it is one thing to plan a campaign in Chicago to cover the entire country, and another to have it carried out locally. In this state the men who have stood the brunt of the legislative battles year after year may be counted on the fingers of two hands. And some of them have now tired of the work so it is necessary to get new blood into the movement.

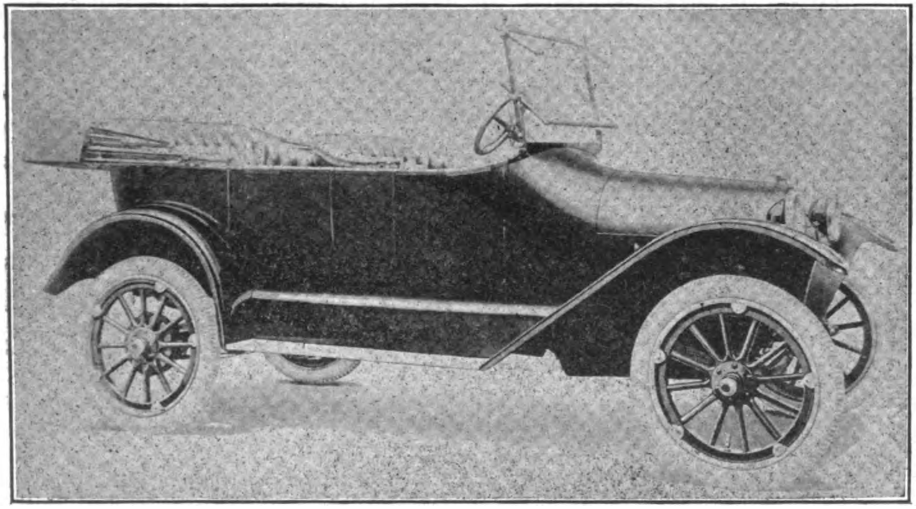
A very good idea of conditions is shown by the truck laws of Massachusetts and Connecticut. Today in Massachusetts the truck owners pay a tax of $5 for one ton and $3 for each additional ton. Connecticut now has a law where the fees run up to $100 and more for the larger trucks, while New York and New Jersey truck dealers and owners are squirming under big fees.

In Massachusetts the fight is made before a law is passed. In other states no one bothers about them until the law is in force. Then there is a hue and cry and an attempt to repeal. Legislators seldom repeal laws.

The dealer of today may be a congressman tomorrow, or hold some state office. Ordinarily, because he is selling high priced commodities he is well known in his community, and he has influence with his fellow men. It is the personal interview with lawmakers that counts. Letters and telegrams often do not leave an impression the next day.

If a strong committee is selected to meet a group of the manufacturers and the outline of the aims of the organization is explained fully there is no reason why the two cannot form a working agreement. Each must have faith in the aims and purposes of the other.

There is room for the new organization along the lines of legislation and in other ways. To get a good start is imperative. It means a lot of hard work for the executives.



**Chevrolet New Series Four-Ninety Touring Car, Made by the Chevrolet Motor Co., Flint, Mich. Described in the Automobile Journal July 25, 1917.**

**Wheelbase, 102 inches.**
**Engine, 3 11/16x4.**
**Lubrication, splash and pump.**
**Carburetor, Zenith double jet.**
**Ignition, Remy.**
**Clutch, cone type.**
**Cooling, pump.**
**Transmission, selective, three speeds and reverse.**
**Rear axle, ¾ floating.**
**Drive, left; centre control.**
**Springs, semi-cantilever front and rear.**
**Tires, 30x3½.**
**Price, $635.**

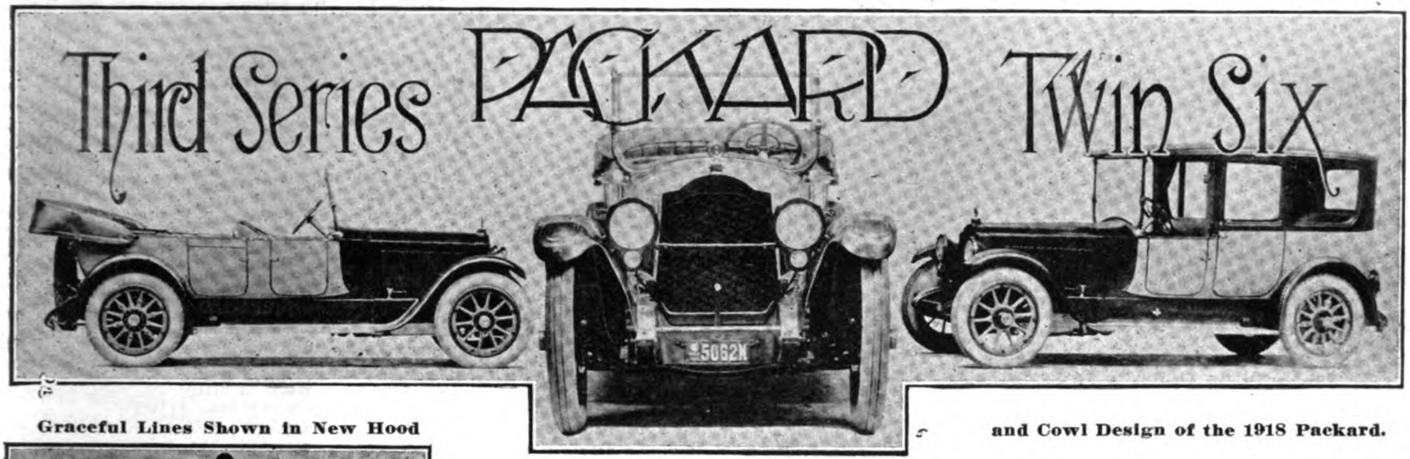
### JENKINS VULCAN TO LOCATE AT RICHMOND.

The Jenkins Vulcan Spring Co., St. Louis, Mo., will erect a plant at Richmond, Ind., and will employ about 75 men to start in the new factory. The capital of the company is $300,000, which is about two-thirds subscribed.

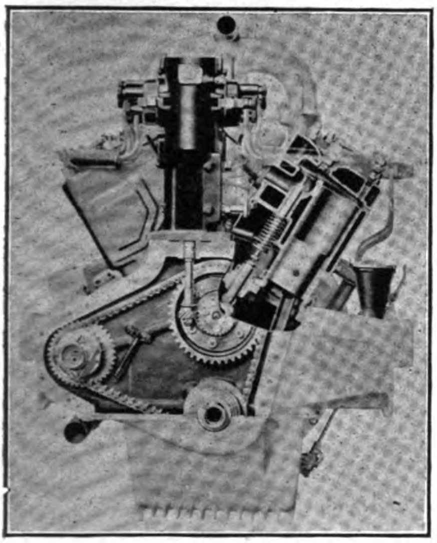
T. B. Jenkins is the president of the company. Four out of seven of the directorate will be residents of Richmond.

### PULLMAN AND ENGER ASSETS IN SAME HANDS.

The same interests which recently acquired the assets of the Enger Motor Car Co. have purchased the Pullman Motor Car Co. plant and business. The price paid was $392,000.



Graceful Lines Shown in New Hood and Cowl Design of the 1918 Packard.



Valve Gear Assembly of Motor.

### *Trade Points and Brief Information*

Made by the Packard Motor Car Co., Detroit, Mich., with added refinements and the bodies, in general effect, slung lower. Radical changes in appearance are mostly in the car forward from the cowl. The open cars are priced at $3450 and $3850 and the enclosed cars range in price from $4800 to $5600. Complete description of the new models in the Automobile Journal, Aug. 10, 1917.

SPECIFICATIONS OF 3-35.

Engine, 12 cylinders.
Bore and stroke, 3x5.
Cylinders, L head, V type.
Horsepower, 43.2. (S. A. E.)
Cooling, pump.
Lubrication, pressure.
Electric system, Bijur, two unit.
Ignition, Delco.
Carburetor, Packard.
Transmission, 3 speeds forward, reverse.
Rear axle, semi-floating.
Springs, extra long and wide semi-elliptic.
Tires, 35x5.
Windshield, form fitting.
Wheelbase, 136 inches.

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# RECORD OF NEW BUILDING PLANS IN AUGUST

## Contracts Made and Plans Contemplated for Alterations or the Building of Garages, Repair Shops, Service Stations and New Plants.

**Benton, Ark.;** R. B. Homan; one-story garage, 50x50.

**Fort Smith, Ark.;** P. W. Sheridan; one-story garage, 140x75.

**Fort Smith, Ark.;** Yantis-Harper Tire Co.; one-story garage; $15,000.

**Perryville, Ark.;** Soroggins & Norman; one-story garage, 54x140.

**Rison, Ark.;** P. G. Smart Auto Co.; one-story garage, 50x100.

**Los Angeles, Cal.;** John Schell; one-story garage, 38x205; $31,000.

**Los Angeles, Cal.;** I. M. and L. H. Irvine; one-story garage; $15,000.

**Los Angeles, Cal.;** William Brown, Washington and Figueroa streets; one-story garage, 100x179; $25,000.

**Oakland, Cal.;** H. O. Harrison Co., 288 28th street; one-story garage; $10,000.

**Pasadena, Cal.;** J. H. Young, Pasadena avenue and Colorado street; one-story garage; $5000.

**San Diego, Cal.;** Horace B. Day, Front and B streets; one-story garage, 50x100.

**San Diego, Cal.;** Studebaker Garage; one-story garage, 50x50; $5000.

**Selma, Cal.;** Northrup & Turner, Second and W. Front streets; one-story garage; $7000.

**Stockton, Cal.;** Sunset Carriage Works; one-story garage, 50x120; $3500.

**Canon City, Col.;** Royal Garage Motor Co.; one-story garage, 100x125.

**Denver, Col.;** Moore Investment Co.; two-story garage, 50x130; $28,000.

**Denver, Col.;** Swenson Automobile Co., 20th and Champa streets; one-story garage and salesroom; $20,000.

**Denver, Col.;** A. W. Hendricks, 1115 Broadway; one-story garage; $23,000.

**Denver, Col.;** Community Garage Corp., 14th and Champa streets; one-story garage, 125x100; $150,000.

**Denver, Col.;** R. C. Campbell, 1720 Ogden street; one-story garage; $2000.

**Bridgeport, Conn.;** Connecticut Auto Manufacturing Co.; Connecticut National Bank building; three-story reinforced concrete automobile salesroom, 75x150, on Main street; about $80,000.

**Hartford, Conn.;** David Stiegel, 193 Franklin street; one-story garage, 60x150.

**Hartford, Conn.;** Julian Glowaski, 89 Main street; one-story garage; $10,000.

**Hartford, Conn.;** Henry A. Jerkins, 55 Forest street; one-story garage; $10,000.

**New Britain, Conn.;** Matthew J. Hayes; one-story garage, 65x155; $10,000.

**New Britain, Conn.;** Thomas Crowe; one-story garage, 49x125; $4000.

**New Haven, Conn.;** Farrar & Hagan, 83 Walley avenue; one-story garage, 41x106.

**New Haven, Conn.;** F. W. Kasock; one-story garage, 90x50.

**New Haven, Conn.;** P. Cysano, 545 Grand avenue; one-story garage, 25x43.

**Stamford, Conn.;** Atlantic Motor Co.; one-story service station, 91x40; $2500.

**Waterbury, Conn.;** John Stokes; two-story garage, 54x60; $7000.

**New Castle, Del.;** John Rees, Third street and Delaware avenue; one-story garage, 60x75; $6000.

**Wilmington, Del.;** T. M. Monagham; one-story garage, 60x80.

**Washington, D. C.;** Benjamin F. Simons; four-story garage, 75x80.

**Washington, D. C.;** John Morriz, 17th and U streets; one-story garage; $70,000.

**Washington, D. C.;** Semmes Motor Co.; Rhode Island avenue and Ninth street, N. W.; one-story garage; $100,000.

**Atlanta, Ga.;** James R. Wylie Co.; one-story garage, 101x150; $75,000.

**Boise, Idaho;** H. C. Wilson Garage Co.; one-story garage, 50x120; $8000.

**Boise Idaho;** H. H. Bryant & Sons, 11th and Front streets; one-story garage; $27,000.

**Meridian, Idaho;** Vickers-Sims Hardware Co.; one-story garage; $3500.

**Algonquin, Ill.;** William Dehmlow; one-story garage, 50x100.

**Alton, Ill.;** William Flachenecker, Third and Vine streets; one-story garage; $8000.

**Aurora, Ill.;** Nicholas Williams; one-story garage, 76x170.

**Bellville, Ill.;** J. H. Wangelin, Mascoutah avenue and Main street; one-story garage; $25,000.

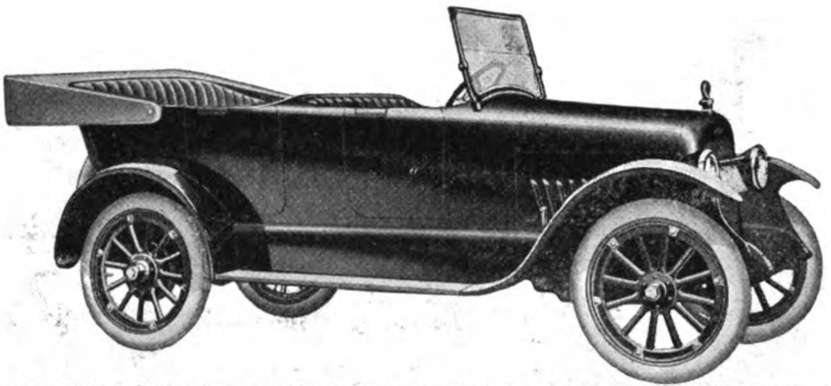
**Champaign, Ill.;** E. V. Kirby, Orpheum building; three-story public garage, 68x132; $60,000.

**Champaign, Ill.;** Fiedler Brothers; one-story garage; $10,000.

**Chicago, Ill.;** Poster Brothers, 6223 Princeton avenue; one-story garage; $15,000.

**Chicago, Ill.;** Staver Motor Car Co., Garfield boulevard and Federal street; one-story service station; $100,000.

**Chicago, Ill.;** William Grafe, 2835 Irving Park boulevard; one-story garage, 50x82; $10,000.



**Economy Model S-48 Five-Passenger Touring Car, Made by the Economy Motor Car Co., Tiffin, O. Price, $1395. Described in the Automobile Journal of Aug. 10, 1917.**

**Wheelbase, 115 inches.**
**Engine, eight-cylinder, 3x3½.**
**Carburetor, Zenith, twin jet.**
**Gasoline feed, Stewart vacuum.**
**Ignition, Connecticut, with coil and distributor.**
**Clutch, Borg & Beck dry plate.**
**Transmission, three speed and reverse.**
**Starting and lighting, two-unit Dyneto.**
**Front axle, I beam section.**
**Rear axle, full floating type.**
**Springs, semi-elliptic front, long semi-elliptic rear.**
**Tires, 33x4, non-skid rear.**

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**Chicago, Ill.;** L. Lange, 5233 Greenwood avenue; one-story garage, 100x143; $20,000.

**Chicago, Ill.;** T. Schultz, 1541 W. 47th street; one-story garage, 48x70.

**Chicago, Ill.;** C. Johnson, 6853 Cornell avenue; one-story garage, 100x211; $20,000.

**Chicago, Ill.;** William Kratzenberg, Brandon avenue and 91st street; one-story garage, 77x135; $20,000.

**Collinsville, Ill.;** J. C. McLanahan, Seminary and Main streets; one-story garage, 67x144.

**Dunlap, Ill.;** Harrison Dimmon; one-story garage, 62x54.

**Farmington, Ill.;** Robert Reeder; one-story garage, 39x80.

**Farmington, Ill.;** F. S. Vanderslott; one-story garage, 64x96; $10,000.

**Frankfort, Ill.;** Folkers Brothers; one-story garage; $10,000.

**Hardin, Ill.;** G. H. Eastham; one-story garage, 40x80.

**Jacksonville, Ill.;** Howard Zahn; one-story garage, 67x100.

**Paris, Ill.;** H. L. Hodge; one-story garage, 40x120; $5000.

**Pontiac, Ill.;** Edward Finehold; one-story garage, 50x120; $10,000.

**Thomasboro, Ill.;** Fielder Brothers: one-story garage, 40x126.

**Wheaton, Ill.;** Mrs. C. R. Roger; two-story garage and show room, 66x82; $15,000.

**Anderson, Ind.;** Tucker & Forkner, Pendleton and Madison avenues; one-story garage; $1000.

**Brookville, Ind.;** Henry Ford; one-story garage; $7000.

**Indianapolis, Ind.;** J. E. Jones, 1623 Bellefontaine street; one-story garage: $2500.

**North Liberty, Ind.;** A. M. Long, 1128 Lincoln way, South Bend, Ind.; one-story public garage, 66x155; $8000.

**Peru, Ind.;** Miami Company; one-story garage, 22x75.

**Rochester, Ind.;** James Enoch; one-story public garage, 40x158.

**South Bend, Ind.;** A. D. Baker, 736 Lincoln way, W.; one-story garage; $18,000.

**Wabash, Ind.;** Neher-Ford Garage; one-story garage, 95x150.

**Warsaw. Ind.;** L. N. Nehr; one-story garage, 90x150.

**West Lebanon, Ind.;** Thomas Groves; one-story garage, 40x120.

**Zionsville, Ind.;** Brendel & Brendel; one-story garage, 48x102.

**Bridgewater, Ia.;** Leiferman Brothers; one-story garage; $4000.

**Casey, Ia.;** F. O. and C. B. Gray; one-story garage, 45x90.

**Des Moines, Ia.;** F. M. Hubbell Son Co.; Hubbell building; three-story garage, 100x169; $75,000.

**Dubuque, Ia.;** Grover Vogelesberg; one-story garage, 40x100.

**Emmetsburg, Ia.;** W. D. Donaldson; one-story garage, 48x150.

**Emmetsburg, Ia.;** P. and E. A. Branagan; one-story garage, 44x230.

**Farley, Ia.;** Clark Severn Co.; one-story garage, 50x120; $5000.

**Fort Dodge, Ia.;** John Colling and John Brady; one-story garage, 58x140; $40,000.

**Grinnell, Ia.;** Hagen Brothers; one-story garage, 85x135.

**Hampton, Ia.;** Harrison Motor Co.; one-story garage, 120x66.

**Hampton, Ia.;** H. E. Ford; one-story garage, 66x124; $15,000.

**Iowa Falls, Ia.;** Snyder-Kayser Ford Co.; one-story garage, 66x132; $15,000.

**Keota, Ia.;** Guy E. Hoover; one-story garage, 100x100; $8000.

**Larchwood, Ia.;** R. S. Fuller; one-story garage, 30x50.

**Macedonia, Ia.;** J. R. Tibbles; one-story garage, 50x66.

**Onawa, Ia.;** West Broadway Garage; one-story garage, 112x66.

**Ossian, Ia.;** E. B. Cutler, Lincoln Highway Garage; one-story garage, 66x132.

**Sioux City, Ia.;** B. E. Short, Seventh and Pearl streets; one-story garage and sales room, 100x150; $25,000.

**Sioux City, Ia;** M. L. Flinn, Sixth and Pearl streets; one-story garage; $20,000.

**Yorktown. Ia.;** H. S. Griffith; one-story garage, 80x75; $5460.

**Colby, Kan.;** New Ball Garage; one-story garage, 50x150.

**Fall River. Kan.;** C. E. Ater; one-story garage, 26x75.

**Fowler, Kan.;** Leo Meng; one-story garage, 50x80.

**Hill City, Kan.;** O. D. Gauthier; one-story garage, 50x80.

**Hutchinson. Kan.;** Arnold Automobile Co.; one-story garage, 50x100.

**Inman, Kan.;** Roberts & Rutledge; one-story garage, 25x80.

**Junction City, Kan.;** Herman Wetzig: one-story garage, 50x100.

**Pittsburg, Kan.;** A. & A. Garage; one-story garage, 100x100; $20,000.

**Pittsburg, Kan.;** L. H. Billings; one-story garage, 85x150.

**Pratt, Kan.;** George S. Scantlin; two-story garage, 50x142; $20,000.

**Salina, Kan.;** J. W. Hahn; one-story garage and sales room, 50x120.

**Wichita, Kan.;** Kansas Independent Laundry Co., Second and Emporia streets; one-story garage, 50x50; $4000.

**Wichita, Kan;** Lorentz Schmidt, 121 N. Market street; one-story garage, 50x140; $10,000.

**Frankfort. Ky.;** Nicol Garage; one-story garage, 40x200.

**Henderson, Ky.;** A. T. Kockritz; one-story garage, 35x75.

**Louisville, Ky.;** W. L. Kennett; one-story brick garage; $35,000.

**Louisville, Ky.;** Browder & Hoskins Co.; brick and steel garage; $25,000.

**Louisville, Ky.;** Brinton B. Davis; two-story public garage; $40,000.

**Louisville, Ky.;** George Hoertz, Sr., 125 W. Chestnut street; one-story garage; $5000.

**Louisville, Ky.;** P. M. Andriot, 215 W. Green street; one-story garage, 47x105; $20,000.

**Louisville, Ky.;** G. M. Clark, Third and Kentucky streets; one-story garage; $14,000.

**New Orleans, La.;** Forschler Motor Truck Manufacturing Co.; brick automobile building, 150x120.

**Baltimore, Md;** W. J. Chapman Coal Co., Sharp and Lombard streets; one-story brick garage, 51.9x22.

**Baltimore, Md.;** Mrs. Julia R. Emory, 17 E. 22nd street; one-story garage, 50x50; $4000.

**Baltimore, Md.;** E. J. Revell, Fidelity building; one-story garage; $10,000.

**Baltimore, Md.;** Philip W. Knefely, Charles and 29th streets; $1100.

**Baltimore, Md.;** J. A. & E. M. Kraft, Harford avenue and Abbollston street; one-story garage; $12,000.

**Baltimore, Md.;** Max Silberman, Mount and Mulberry streets; one-story garage, 65x74; $5000.

**Baltimore, Md.;** D. H. Emory estate; one-story public garage, 51.6x35.11; at Henderson and Barclay streets.

**Baltimore, Md.;** Maggio & Favo, 405 Diamond street; one-story garage and storage station; $15,000.

**Hagerstown, Md.;** J. W. Rohrer, 46 W. Antietam street; one-story garage, 50x120; $10,000.

**Arlington, Mass.;** William A. Muller, 231 Massachusetts avenue; one-story public garage, 50x100.

**Boston, Mass.;** Pasquale Geels; one-story garage, 36x100.

**Boston, Mass ;** E. T. Dando, 44 Falcon street; one-story public garage, 22x60.

**Boston, Mass.;** William O. Sherman, 18 Syndhurst street, Dorchester district; one-story public garage; 30,000 square feet floor space.

**Boston, Mass.;** A. J. Carpenter, Jr., 39 Dunreath street, Roxbury district; one-story public garage, 112x160; $40,000.

**Boston, Mass.;** St. Mary's Trust Co.; care Harold G. King, 185 Devonshire street; two-story public garage, 70x180; $18,000.

**Dedham, Mass.;** Charles L. Harding; two-story private garage, 60x60.

**Fall River, Mass.;** William J. Dunn. Borden block; one-story garage, 100x200; $100,000.

**Fall River, Mass.;** Salem J. Behara, 1476 Pleasant street; one-story garage, 50x100; $6000.

**Holyoke, Mass.;** M. McConnolly; one-story garage, 57x23.

**New Bedford, Mass.;** Weyland I. Sturtevant, 14 Ward street; one-story public garage, 50x100; $10,000.

**New Bedford, Mass.;** Abram Ekstein, 51 Summer street; one-story public garage, 50x100; $10,000.

**Quincy, Mass.;** Connell & McKone Co., Hancock and Adams streets; one-story garage, 20x60; $50,000.

**Springfield, Mass.;** Harry B. Bland, 72 Banney street; one-story garage, 50x70; $6000.

**Swampscott, Mass.;** Swampscott Standard Garage Co.; one-story garage; $100,000.

**Worcester, Mass.;** Rose Cohen; one-story public garage, 43x45.

**Worcester, Mass.;** Norton Co.; one-story garage; $5000.

**Worcester, Mass.;** Samuel W. Julvin, 17 Green street; one-story garage, 19x34: $3000.

**Badaxe, Mich.;** Huron Motor Sales Co.; two-story public garage, 50x110; $20,000.

**Croswell, Mich.;** Smyth & Straffton; one-story public garage, 100x50.

**Detroit, Mich ;** Paush Manufacturing Co., 1666 Mt. Elliott avenue; one-story garage, 73x27; $4000.

**Detroit, Mich.;** Maurice W. Fox & Co., 156 E. Milwaukee avenue; two-story garage and service station, 75x100; $15,000.

**Detroit, Mich.;** E. Weiner, 1438 Kirby avenue; one-story garage, 60x100.

**Detroit, Mich.;** Lukomski Brothers Co.; 2480 E. Grand boulevard; one-story garage, 30x129; $2000.

**Detroit, Mich.;** Motor Truck Body Co., 607 Central street; one-story garage, 64x242; $17,000.

**Detroit, Mich.;** F. H. Goddard, 516 Franklin street; one-story garage, 52x130; $17,000.

**Grand Ledge, Mich.;** William Schavey & Sons; one-story garage, 66x165.

**Grand Rapids, Mich.;** J. F. Haven, 1151 Alpine avenue; one-story garage; $3500.

**Grand Rapids, Mich.;** Martin Whalen, Oakes street and Division avenue; one-story garage, 51x51.

**Grand Rapids, Mich.;** O. E. Newton; one-story garage, 40x127; $8000.

**Grand Rapids, Mich.;** O. H. Hendrick & Son, 737 Lockwood street, N. E.; one-story garage; $3700.

**Ionia, Mich.;** O. E. Newton; one-story garage; $8500.

**Kingsley, Mich.;** Walter Lang; one-story garage, 50x60.

**Merrill, Mich.;** Thomas Johnson; one-story public garage, 66x100; $10,000.

**Muskegon, Mich.;** C. W. Cunningham, care Sargent Manufacturing Co.; one-story public garage, 19x29; $600.

**Newaygo, Mich.;** Henrikson & Mahaffa; one-story garage, 40x60.

**Saginaw, Mich.;** Hubbell Auto Sales Co., S. Washington and Janes avenues; one-story garage, 80x140.

**Eveleth, Minn.;** C. Jesmore; one-story garage, 50x117.

**Mapleton, Minn.;** Foerstner Brothers; one-story garage; $13,000.

**Minneapolis, Minn.;** Andrew A. Peterson, 3101 S. 15th avenue; one-story private garage, 30x30.

**Monterey, Minn.;** F. N. Christman; one-story garage, 48x70.

**Oronco, Minn.;** John Meyers; one-story garage, 44x80.

**Owatonna, Minn;** L. C. Palas; one-story garage, 40x70.

**Pine Island, Minn.;** John Meyers; one-story garage, 44x80.

**Pipestone, Minn.;** Samuel L. Hirschy, Olive and Anna streets; one-story garage, 125x150.

**Sherburn, Minn.;** Colvin Brothers; one-story garage, 50x100.

**Stockton, Minn.;** Smith & Spaag; one-story garage, 40x60.

**St. Paul, Minn.;** Snelling Garage Co.; one-story garage; $10,000.

**St. Paul, Minn.;** Alfred Bruckner; one-story garage; $2500.

**Warroad, Minn.;** McKenzie & Nelson Garage, Main and Lake streets; one-story garage, 110x50.

**Belleville, Mo.;** Modern Auto and Garage Co., Naascoutah avenue and Main street; one-story garage, 80x150; $50,000.

**California, Mo.;** B. F. Brokhausen; one-story garage, 105x105.

**Fulton, Mo.;** B. H. Jameson; one-story garage, 42x120.

**Higginsville, Mo.;** Gladish Brothers; one-story garage, 50x140.

**Humansville, Mo.;** Auto Inn Garage Co.; one-story garage, 50x70.

**Joplin, Mo.;** P. L. Swartz, 122 N. Joplin street; one-story garage, 100x110; $18,000.

**Kansas City, Mo.;** S. Z. Schutte; brick automobile supply building, terra cotta trimming; $55,000. Lessee, Motor and Machinists Supply Co.

**Kansas City, Mo.;** J. G. Thurtle, 603 Ridge building; one-story private garage, 20x50; $1000.

**Kansas City, Mo.;** William Helm; one-story garage at 3823 Broadway; $32,000. Lessee, Flynn & Bretting Motor Car Co.

**Neosho, Mo.;** Neosho Auto Co.; one-story public garage, 75x125; $10,000.

**Rolla, Mo.;** Edwin Long; one-story public garage, 50x100; $7500.

**Ruby, Mo.;** C. D. Stinson; two-story private garage, 24x34; $3500.

**Springfield, Mo.;** Southwest Automobile and Supply Co.; one-story garage, 50x200; $25,000.

**St. Joseph, Mo.;** W. G. Farileigh, Ashland avenue and Sherman street; three-story salesroom, 70x140; $40,000.

**St. Louis, Mo.;** William Haas, 1716 Waverly place; one-story garage, 17x70; $1000.

**Tarkio, Mo.;** Green & Cunningham; one-story garage, 50x100.

**Tima, Mo.;** Yehl Garage; one-story garage, 50x80.

**Clyde Park, Mont.;** Rice & Venge Brothers; one-story garage; $1250.

**Havre, Mont.;** Prentice Automobile Co.; one-story garage, 45x100; $5000.

**Poplar, Mont.;** Pioneer Auto Co.; one-story brick garage, 50x125.

**Roundup, Mont.;** I. G. Madden; one-story garage, 75x140.

**Beatrice, Neb.;** Victor Lang, Fourth and Ella streets; one-story garage, 80x100.

**Blue Hill, Neb.;** William Frahm and F. Corner; one-story garage, 43x120.

**Dewitt, Neb.;** A. F. Burger; one-story garage, 48x100.

**Fairbury, Neb.;** C. G. Catlin Company; one-story garage; $15,000.

**Harward, Neb.;** H. G. Welensiek; one-story garage, 44x140.

**Newman Grove, Neb.;** F. L. Widergren; one-story garage, 97x144.

**Omaha, Neb.;** C. M. Skinner, 2309 M street; one-story garage; $9000.

**Omaha, Neb.;** Edward Cackley, 2622 N. 16th street; one-story garage; $7000.

**Omaha, Neb.;** M. D. Cameron, 17th and Jackson streets; one-story garage; $15,000.

**Omaha, Neb.;** Meyer & Klinger, 15th and Capitol streets; one-story garage, 175x62; $10,000.

**Omaha, Neb.;** Lundgren Brothers, 4916 Dodge street; one-story garage, 55x112; $5000.

**Omaha, Neb.;** Orr Motor Sales Co.; one-story garage and service station, 120x112; $25,000.

**Phillips, Neb.;** George E. Horn; one-story garage, 38x70.

**Surprise, Neb.;** Way & Fisk; one-story garage, 50x80; $5000.

**Thedford, Neb.;** Thedford Auto Co.; one-story garage, 50x74.

**Wymore, Neb.;** F. B. Hunt; one-story garage, 75x140; $15,000.

**Camden, N. J.;** J. H. Wenke, 805 Pearl street; one-story garage, 17x18; $1500.

**Haddonfield, N. J.;** W. H. Lummis, 312 Linden street, Camden, N. J.; one-story garage, 21x23; $4000.

**Jersey City, N. J.;** William Byron, 34 Warner avenue; one-story public garage, 40x140; $15,000.

**Newark, N. J.;** Clinton Hill Ford Co., 443 Clinton avenue; one-story garage, 45x360; $18,000.

**Newark, N. J.;** Ralph Zirpoli, 98 Jackson street; one-story garage, 100x20.

**Newark, N. J.;** Packard Motor Car Co., 1618 Broadway; four-story garage and show room, 90x150, and one-story wing, 90x150.

**Newark, N. J.;** Abraham Gennet, 105 Peshine avenue; one-story public garage, 75x100; $8000.

**Newark, N. J.;** Alexander Kertesz, 571 S. 17th street; one and two-story public garage, 20x72 and 98x100.

**Albany, N. Y.;** Barry Brothers, 254 S. Pearl street; one-story garage, 20x30; $2500.

**Albany, N. Y.;** John H. Gleason, 25 N. Pearl street; two-story garage, 42x38; $2500.

**Albany, N. Y.;** Mrs. John D. Parsons, 233 State street; 1½-story private garage, 42x76.

**Brooklyn, N. Y.;** John Deinhardt, 376 Hamburg avenue; one-story garage, 25x100; $7000.

**Brooklyn, N. Y.;** Andrew Trocchia, 6612 14th avenue; one-story garage, 25x60; $4000.

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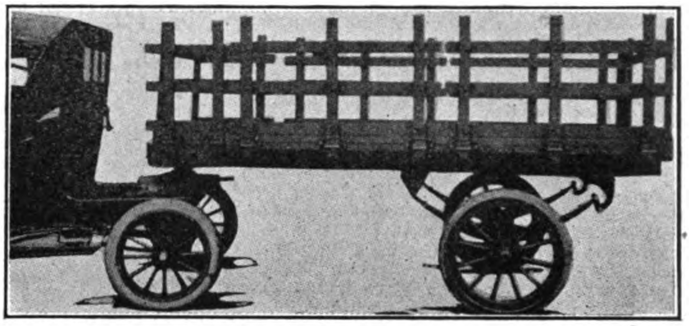
# *The King 1½-ton Semi-Trailer*

Made by the King Trailer Co. of Ann Arbor, Mich., which has standardized three types that are known from experience to be extremely serviceable and economical. The King units are truck designed, the trailers being essentially truck bodies mounted on a single axle so positioned that it will carry approximately 70 per cent. of the load, the remainder being supported by the tractor. Complete description in the July (Engineering) Number of the Motor Truck.

With a trailer used with a Ford runabout having a load capacity of 3000 pounds, 900 pounds is carried by the tractor, which is well within the stress designs of the chassis. All the trailers are fitted with the King-Irwin universal motion shock absorbing fifth wheels, with which the bodies are coupled to the tractors.

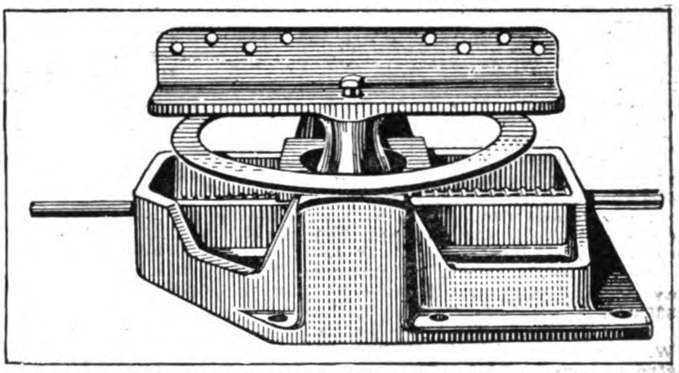


King Semi-Trailer, Coupled to a Ford Runabout That Serves as a Tractor.

The main dimensions of the King semi-trailers are as follows:

Length, 144 in.
Width, 60 in.
Height of stake, 36 in.
Platform height from ground, 42 in.
Frame, wood.

Tread, 56 in.
Spring's centres, 38 in.
Tires, 32x3 in.
Axle, 2¼ in. round.
Springs, 42x2½ in.
Bearings, Bowser roller thrust.



Universal Motion Shock Absorbing Fifth Wheel, an Exclusive Equipment with King Trailers.

**Brooklyn, N. Y.;** Arthur Lauer, 157 Atkins avenue; one-story private garage, 25x51; $3000.

**Brooklyn, N. Y.;** A. Brooks, 350 Fulton street; one-story garage, 25x90; $8000.

**Brooklyn, N. Y.;** Louis Schnell, 148 Wythe avenue; one-story garage, 30x100; $5000.

**Brooklyn, N. Y.;** Samuel Appelbaum, 201 Thatford street; one-story garage, 50x110; $15,000.

**Brooklyn, N. Y.;** Schutte Brothers, 1240 Flatbush avenue; one-story garage, 17x64; $3000.

**Brooklyn, N. Y.;** Christopher Bauer, 801 Manhattan avenue; one-story garage, 25x100; $6000.

**Brooklyn, N. Y.;** Tobias Goldstone, 50 Graham avenue; one-story garage, 100x100; $20,000.

**Brooklyn, N. Y.;** D. Perlman, 113 Penn street; one-story garage, 85x146; $20,000.

**Brooklyn, N. Y.;** John Farma, 293 21st street; one-story garage, 75x110; $10,000.

**Brooklyn, N. Y.;** Joseph H. Urchert, 29 Courtland street, New York; one-story garage, 100x100; $22,000.

**Brooklyn, N. Y.;** Coastwise Lumber and Supply Co., 17 Battery Place, New York; one-story garage, 25x55; $3000.

**Brooklyn, N. Y.;** Ruth Construction Co., 113 Penn street; one-story garage, 146x85; $3500.

**Brooklyn, N. Y.;** Cohn Brothers, 361 Stone avenue; one-story garage, 75x100; $25,000.

**Elmira, N. Y.;** Cluto Motor Co., Baldwin and Gray streets; one-story garage, 40x155.

**Lake Keuka, N. Y.;** O. J. Garlock, Palmyra, N. Y.; one-story private garage, 24x38.

**Long Island City, L. I., N. Y.;** Almar Manufacturing Co., 47 W. 34th street, New York; four-story garage, 50x100.

**Long Island City, L. I., N. Y.;** R. Schmidt, 162 Prospect street; two-story garage and storage station, 25x48; $5500.

**Long Island City, L. I., N. Y.;** William Crawford, 7 E. 42nd street, New York; two-story private garage, 22x40.

**New York, N. Y.;** L. Schumacher, First avenue and 62nd street; one-story garage; $35,000.

**New York, N. Y.;** Oval Garage Co., S W. corner Whitlock avenue and Taile street; one-story garage, 320x150.

**New York, N. Y.;** J. Rosebern, 376 213th street; one-story garage, 125x99; $20,000.

**New York, N. Y.;** Forty-Seventh Street Garage, Inc., 322-28 E. 47th street; one-story garage, 100x130.

**New York, N. Y.;** Gillen & Maher, 412-18 W. 15th street; one-story garage, 100x103.

**New York, N. Y.;** A. D. Julliard, 23 Benwick street; one-story garage, 56x60; $25,000.

**New York, N. Y.;** Meyer Coal Co.; one-story garage, 49x32; $2500.

**New York, N. Y.;** Herbert S. and Dudley Harde, 56 W. 45th street; one-story garage, 150x200; $75,000.

**New York, N. Y.;** George Baldo, 2472 Arthur avenue; one-story garage, 50x100; $10,000.

**New York, N. Y.;** Frederick Wilkening, 224 E. 24th street; three-story garage; $12,000.

**New York, N. Y.;** Ferdinand Savignano, 6005 14th avenue, Brooklyn; five-story public garage, 100x100; $100,000.

**New York, N. Y.;** Hugh G. Miller, 220 Broadway; five-story public garage, 50x106; $45,000.

**New York, N. Y.;** Thomas F. Devine, 79 W. End avenue; one-story garage, 100x100.

**New York, N. Y.;** Nesti Construction Co., 658 E. 189th street; one-story garage, 75x100; $15,000.

**New York, N. Y.;** Mary F. McGuinness; one-story garage, 93x102; $15,000. Lessee, Harry Weprin.

**New York, N. Y.;** John H. Beckmann, 2295 University avenue; one-story garage, 20x30.

**Schenectady, N. Y.;** Harry D. Worsky, 462 S. Center street; two-story garage and storage station, 50x84, and one-story wing, 25x44; $9000.

**Syracuse, N. Y.;** M. E. F. Motor Car Co., care Charles Moore, 145 Seymour street; one-story public garage, 63x72; $4500.

**Syracuse, N. Y.;** J. J. Clark, Kirk building; two-story garage, 51x105.

**Syracuse, N. Y.;** C. F. Gaul, 256 James street; one-story private garage; $2000.

**Syracuse, N. Y.;** Grody & Silverman; two-story garage; $4000.

**Syracuse, N. Y.;** J. J. Clark, Madison and S. State streets; one-story garage, 55x112.

**Tonawana, N. Y.;** Echo Motor Co.; one-story garage, 40x80; $15,000.

**White Plains, N. Y.;** R. G. Swartmont, Realty building; one-story private garage, 25x40; $5000.

**Raleigh, N. C.;** S. Brown Shepherd; one-story brick garage; $15,000.

**Wilson, N. C.;** Welfare Automobile Co. and Wilson Sales Co., merged; six-story garage, 70x163; storage for 340 cars.

**Edmore, N. D.;** Johnson & Thompson; one-story garage, 60x100.

**McHenry, N. D.;** King & Bruno; one-story garage, 50x100.

**Akron, O.;** W. J. Frank, 100 F building; two-story garage, 70x200; $40,000.

**Akron, O.;** C. M. Scripture, 405 Ohio building; five-story garage, 60x60.

**Akron, O.;** O. E. Ackerman; one-story garage, 62x200; $15,000.

**Cincinnati, O.;** Evans Oil Co., Elsinore place and Gilbert avenue; one-story filling station; $6500.

**Cleveland, O.;** Packard-Cleveland Motor Co., 5206 Prospect avenue; three-story automobile building; $125,000.

**Cleveland, O.;** A. & B. Realty Co., 4400 Euclid avenue; four-story garage and service station, 80x190; $100,000.

**Cleveland, O.;** Lev Brothers, 2705 E. 55th street; one-story garage; $12,000.

**Cleveland, O.;** American Express Co., 331 Superior avenue; two-story garage, 130x165; $60,000.

**Cuyahoga Falls, O.;** Robinson Auto Garage Co.; one-story garage and salesroom, 45x100; $4000.

**Dayton, O.;** Citizens Motor Car Co., Ludlow and Franklin streets; one-story garage; $50,000.

**Jackson, O.;** G. A. Scott; two-story garage and repair shop, 60x100.

**Toledo, O.;** Frank Muntz; one-story garage, 60x150.

**Toledo, O.;** South Side Garage, Prouty avenue and Broadway; one-story garage; $20,000.

**Toledo, O.;** Judd Richardson, Washington and Superior streets; one-story garage, 120x120.

**Warren, O.;** Trumbull Co., care N. R. Harrington, Court House; one-story garage, 82x75; $70,000.

**Ardmore, Okla.;** Patterson Motor Co.; one-story garage, 72x225.

**Blackwell, Okla.;** J. A. Amos, S. Main and Padon streets; one-story garage, 50x140.

**Coalgate, Okla.;** B. F. Williams; one-story garage, 100x120.

**Lawton, Okla.;** B. P. Fields; one-story garage, 75x150; $10,000.

**Lawton, Okla.;** Auto Electric Co.; one-story garage, 50x120; $7500.

**Nowata, Okla.;** T. Gwilliams; one-story garage, 50x150.

**Oklahoma City, Okla.;** F. A. Guss; one-story brick and concrete garage, 50x140; $12,000.

**Oklahoma City, Okla.;** William Hodjins, 737 E. Sixth street; one-story garage, 50x115; $10,000.

**Purcell, Okla.;** Wells & Pucket; one-story garage, 50x60.

**Sapulpa, Okla.;** George Kadane, 109 S. Main street; one-story garage, 100x40; $12,500.

**Tulsa, Okla.;** J. R. Sharp; two-story garage at 317 E. 10th street; $7000.

**Tulsa, Okla.;** B. M. Gessel; two-story brick garage at 1206 S. Main street; $35,000.

**Bellevue, Pa.;** Albert Miller, 318 Lincoln avenue; one-story private garage, 24x25; $1000.

**Chester, Pa.;** Schwartz Brothers, Third and Fulton streets; two-story garage, 39x128; $15,000.

**Du Bois, Pa.;** G. B. Woodward, Reynoldsonville, Pa.; two-story commercial garage, 50x144; $20,000.

**Erie, Pa.;** Ernest R. Behrend; one-story private garage and chauffeur's quarters, 68x41.

**Ford City, Pa.;** Fritz Scherren; one-story commercial garage and salesroom, 54x106; $15,000.

**Honey Brook, Pa.;** Kennell Brothers; one-story garage, 46x140; $6000.

**Mt. Carmel, Pa.;** Black Diamond Garage; one-story garage, 50x150.

**Pittsburgh, Pa.;** Graham Brothers; one-story commercial garage, 22x90.

**Pittsburgh, Pa.;** J. J. Ridley, 600 Gettysburg street; one story garage, 21x24; $1500.

**Philadelphia, Pa.;** Peter Kuhn, 3058 N. Eighth street; one-story garage, 18x105; $4000.

**Philadelphia, Pa.;** Samuel Mitchell, 405 S. 60th street; one-story garage, 105x125.

**Philadelphia, Pa.;** H. Burstein & Co., 709 Filbert street; two-story garage, 42x106; $25,000.

**Philadelphia, Pa.;** Samuel R. Detwiler, 1724 Camac street; two-story garage and shop, 26x22; $3400.

**Reading, Pa.;** William A. Fink, 246 Franklin street; two-story garage, 45x72; $6000.

**Reading, Pa.;** William A. Fink, 246 Franklin street; one-story public garage, 49x104; $8000.

**York, Pa.;** J. W. Richley Auto Co., 237 East Philadelphia street; two-story garage, 106x234; about $100,000.

**Greer, S. C.;** William Thompson; one-story brick garage, 30x150; $6000.

**Marion, S. D.;** Hieb Brothers; one-story garage, 42x70.

**Midland, S. D.;** Calhoun Brothers; one-story garage, 40x80.

**Toronto, S. D.;** E. W. Snadewald; one-story public garage, 50x88.

**Memphis, Tenn.;** Allen Motor Car Co.; one-story garage, 60x140; $20,000.

**Nashville, Tenn.;** Fisk Rubber Co., Chicopee Falls, Mass.; brick salesroom and service station; stone trimming; plate glass and copper fronts; salesroom and stockroom, 60x80; service station, 60x80; tile floors; oak panel wainscoating; ornamental ceilings; semi-direct electric lighting; vulcanizing and repair shop to be supplied with steel daylight sash and equipped with machinery for rebuilding and repairing tires.

**Cisco, Texas;** Huey Motor Co.; one-story garage, 60x100.

**Conroe, Texas;** McFadden Brothers; one-story garage, 50x100.

**Dallas, Texas;** Sydney Reinhardt, 2025 Cedar Springs road; one-story garage; $11,400.

**Edna, Texas;** B. S. Stockard; one-story garage, 50x100.

**Houston, Texas;** C. F. Ireland; one-story garage; $9186.

**Livingston, Texas;** Livingston Auto Co.; one-story garage, 53x107.

**Llano, Texas;** Watkins Auto Sales Co.; one-story garage, 80x130.

**Port Arthur, Texas;** T. E. Linn, Proctor street and Atlantic avenue; one-story garage; $20,000.

**San Antonio, Texas;** Clem Motor Car Co.; one-story garage; $18,000.

**San Benito, Texas;** Mayer & Toolan; one-story garage, 50x100.

**Seymour, Texas;** F. L. Knight; one-story garage, 25x140.

**Whitewater, Texas;** Sears Auto Co.; one-story garage, 80x125.

**Milwaukee, Wis.;** Charles F. Wacher, 1206 North avenue; one-story garage, 19x59; $1700.

**Milwaukee, Wis.;** Milwaukee Western Fuel Co.; one-story garage, 30x59; $4000.

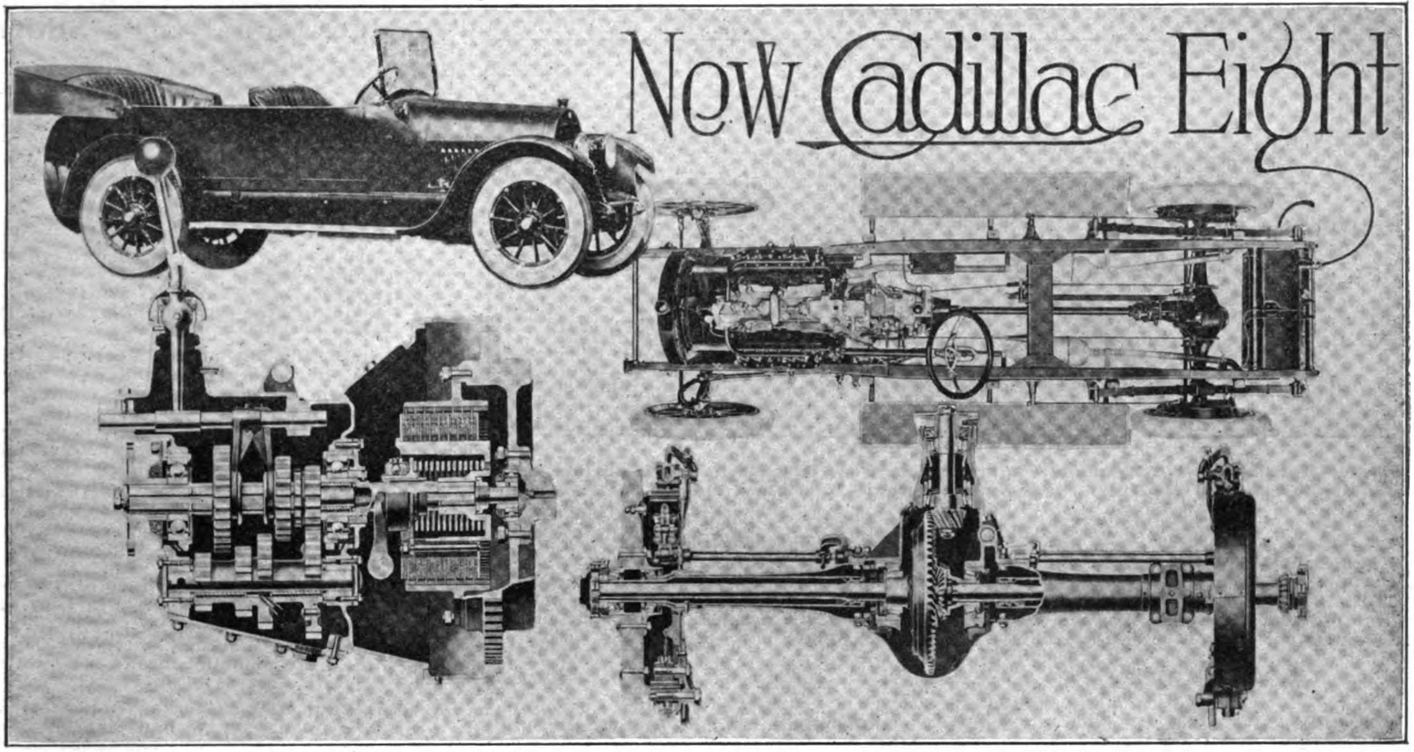
**Milwaukee, Wis.;** F. E. Muller, northeast corner Brown and 23rd streets; one-story garage, 18x43; $1000.

**Milwaukee, Wis;** H. Koeffler, 260 Fifth street; one-story garage; $2500.

**Milwaukee, Wis.;** Byrne Brothers; 24th and National avenue; one-story garage; $35,000.

**La Crosse, Wis.;** Elsen & Phillips; one-story garage, 100x142; $20,000.

**Racine, Wis.;** Racine Auto Tire Co.; five-story reinforced concrete automobile tire factory, 260x220.



**Cadillac Seven-Passenger Touring Car, Made by the Cadillac Motor Car Co., Detroit, Mich., with Stripped Chassis and Sectional View of Engine and Rear Axle. Complete Description in the Automobile Journal, Aug. 10, 1917.**

Wheelbase, **132 in.**
Engine, eight **cylinders, 3⅛x5⅛.**
Ignition, Delco.
Cooling, pump.
Carburetor, own **make.**

**Starter, Delco.**
**Clutch, disc.**
**Transmission, selective, 3 speed, reverse.**
**Rear axle, full floating type.**

**Tires, 37x5.**
**Springs, front, ½ elliptic; rear, ½ elliptic cross.**
**Price, $2590.**

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# CONTRACTS FOR BUILDINGS RECENTLY AWARDED

## Constructions of Garages and Motor Vehicle Service Stations In All Parts of the Country That Are Now Under Way or Soon Will Be

**Texarkana, Ark.;** Henry Adams; one-story brick and concrete garage; for C. M. Blocker, H. F. Endlsey and C. E. Palmer; $3674.

**Denver, Col.;** A. Danielson, 1645 Vine street; one-story garage, 100x125; for Mary E. Pence; $20,000.

**Bridgeport, Conn.;** T. O. O'Brien & Son, 137 Blackrock avenue; one-story garage, 29x44; for Eliza Davis.

**Hartford, Conn.;** Christian Potholm, 699 Broadview terrace; one-story garage, 24x24; for W. J. McDonough.

**New Haven, Conn.;** B. B. Broadbent; one-story garage, 42x63.

**New Haven, Conn.;** E. A. Prince, 498 Howard avenue; one-story garage, 30x20; for H. H. Baldwin, 332 Howard avenue.

**New Haven, Conn.;** Parante Brothers, 51 White street; one-story public garage, 62x125x100; for Angelo Mairona, 16 Washington street; $8000.

**New Haven, Conn.;** Pasquale Valen, 416 Grand avenue; one-story public garage, 60x60x85; for John Anquillare, 279 Wooster street; $6000.

**Wilmington, Del.;** Harry S. Lynch; two-story garage, 45x100; for James Hichen; $6000.

**Chicago Heights, Ill.;** Chicago Heights Construction Co., 1637 West End avenue; one and two-story garage, 50x150; for Lindhout Brothers, 1719 West End avenue; $16,000.

**Chicago, Ill.;** E. Swenson, 558 E. 51st street; two one-story garages, 60x20; $1200.

**Chicago, Ill.;** H. Ecklund, 3513 Reta avenue; one-story garage, 50x122; $18,000.

**Chicago, Ill.;** A. Lund Construction Co., 19 S. La Salle street; three-story garage and service station, 56x80x189; for G. M. Marks, 1239 W. Madison street; $40,000.

**Chicago, Ill.;** Pleas Construction Co., 30 N. La Salle street; three-story service station, 175x110; for Staver Motor Car Corp.; $125,000.

**Chicago, Ill.;** N. P. Severin, 105 N. Clark street; one-story garage and shop, 50x60; for Charles R. Sartain, 1550 Indiana avenue; $3500.

**Macon, Ill.;** Stauffer Brothers, Decatur, Ill.; one-story garage, 50x100; for K. of P.; $6000.

**Frederick, Md.;** Mountain City Garage, 331 N. Market street; two-story garage, 72x151; $15,000.

**Cambridge, Mass.;** Walsh Brothers; one-story private garage, 39x24; for American Rubber Co., East Cambridge; $3000.

**Cambridge, Mass.;** John Welch & Son, 32 Prescott street; one-story public garage, 100x88; for T. Libby & Co., 39 Hartford street; $15,000.

**Cambridge, Mass.;** S. F. Hooper Co., 101 Tremont street, Boston; one-story public garage, 50x24; for James Montgomery; $3500.

**Chelsea, Mass.;** P. F. Smith Co., Boston; one-story public garage, 161x19x20; for Atwood McManus Box Co.; $8000.

**Newton, Mass.;** John Eccleston, 51 Ballou avenue, Dorchester, Mass.; two-story garage, 24x24; for E. O. Lundin, 412 Commonwealth avenue; $3000.

**Walpole, Mass.;** M. W. Aller Construction Co.; one-story private garage, 50x56; for Jacob Lurrtsema; $5000.

**Worcester, Mass.;** Worcester Electric Light Co., 375 Main street; three-story service station, 52x73; $30,000.

**Detroit, Mich.;** Cooper-Wide Mann Construction Co., 8541 Penobscot building; two-story garage, salesroom and service station, 65x114; for West Detroit Auto Sales Co.

**Springfield, Minn.;** Ernest Puhlman; one-story public garage, 125x49; for H. Adolphson and Wayne Potter.

**Kansas City, Mo.;** Max Morris, 1825 Walnut street; one-story public garage, 50x100; for B. Wertzman, 488 Prospect street; $5000.

**Kansas City, Mo.;** William Helm; fireproof garage, 137x50; $32,000. Lessee, Flynn & Breting Motor Car Co., 4041 Broadway.

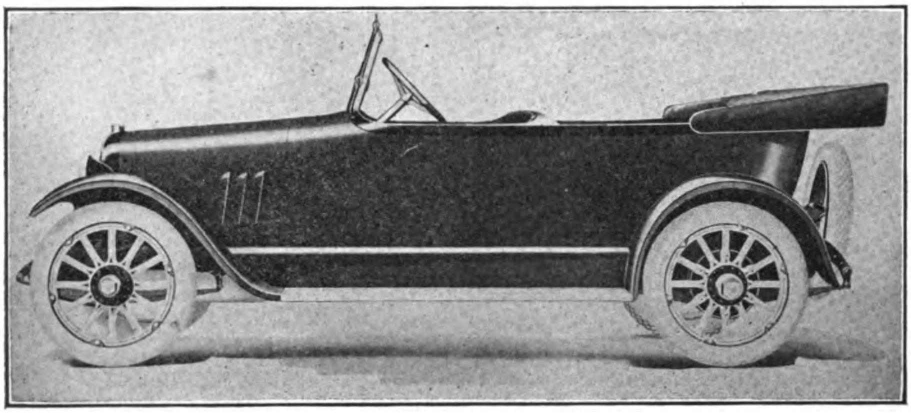
**Omaha, Neb.;** Olson & Johnson, 638 First National Bank building; three-story garage, 66x132; for McCoffrey Motor Co., 10th and Howard streets; $50,000.

**Seward, Neb.;** The Eastergard Co., North Bend, Neb.; one-story garage; for J. Timmerer; $35,000.

**Camden, N. J.;** Tony Prawdzik, 1268 Thurman street; one-story garage, 18x20; for Rev. St. Wierzynski, 1010 Liberty street; $1000.

**Camden, N. J.;** William Wrifford, West and Clinton streets; one-story garage, 16x18; for Dr. Myer Segal, 1004 Newton avenue; $2000.

**Camden, N. J.;** Harry Hinchman, 223 Arch street; one-story garage, 32x25; for J. D. Johnson Co.; $2500.



**Eagle-Macomber Five-Passenger Touring Car, Described Mechanically in the Automobile Journal, July 25, 1917. Made by the Eagle-Macomber Motor Car Co., Sandusky, O.**

**Wheelbase, 118 in.**
**Engine, five-cylinder, rotary type, 3¾x5.**
**Carburetor, Zenith, automatic type.**
**Ignition, Atwater Kent, open circuit.**
**Starting and lighting, Wagner two-unit system.**
**Front axle, I beam section.**
**Rear axle, floating type.**
**Springs, ½ elliptic, front, ½ elliptic, long, rear.**
**Weight, 2350 pounds.**
**Price, $700.**

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**Trenton, N. J.;** C. Y. Barlow, 263 Bellevue avenue; one-story garage, 25x50; for J. E. Stevenson Co.; $1500.

**Trenton, N. J.;** Stone & Webster Engineering Co., 5 Nassau street, New York; one-story garage, 28x42; for Westinghouse Lamp Co., 165 Broadway, New York; $4000.

**Riverside, N. J.;** Alexander Albright, Camden, N. J.; one-story garage, 24x20; for John Mueller, secretary Keystone Watch Case Co.; $1500.

**Utica, N. Y.;** R. Richards & Son Co., 246 Elizabeth street; one-story garage, 26x44; for C. D. A. Williams, 11 Hopper street; $3000.

**Lancaster, Pa.;** Highbee & Roberts; one-story garage, 40x92; $6000.

**Pittsburgh, Pa.;** J. Lauer & Sons, 610 Portland street; one-story private garage, 34x25; for J. F. Moore, Walnut and Aiken avenues; $2000.

**Pittsburgh, Pa.;** D. H. Negley, 7142 Idlewild street; one-story private garage, 16x18; for McCarth & Jacobs, 1900 Wightman; $2000.

**Pittsburgh, Pa.;** H. D. Negley, 7142 Idlewild street; one-story private garage, 12x18; for C. C. Cadwallader, 5500 Bryant street; $1000.

**Philadelphia, Pa.;** George R. Dewees, 311 Orange avenue; one-story garage, 24x51; for Adam K. Walch, 5538 N. Second street.

**Philadelphia, Pa.;** Mary B. Hamilton; one-story stone garage, 18x21; northeast corner Wayne avenue and Haines street; $1200.

**Philadelphia, Pa.;** Frank Donato; one-story brick garage, 16x118; at 1720 South Third street; for Dr. Max Bredt; $2000.

**Philadelphia, Pa.;** E. W. Cook; one-story brick garage, 27x16.6; at 6165 Catharine street; $1000.

**Philadelphia, Pa.;** Herman Voight; one-story brick garage, 60x88.7; southeast corner 24th street and Fairmount avenue; for James T. Finesey; $10,300.

**Philadelphia, Pa.;** F. J. Lambert; one-story brick garage, 20x24; at 6340 Media street; $700.

**Philadelphia, Pa.;** Samuel D. Milner; one-story brick garage, 20x32; southwest corner Frankford avenue and Wakeling street; for Frankford Hospital; $2500.

**Philadelphia, Pa.;** J. R. & R. S. McConnell; one-story brick garage, 37x64; west side 61st street, south of Greenway avenue; $700.

**Philadelphia, Pa.;** H. Perloff; one-story garage, 17.6x126; south side Fisher's lane, west of 16th street; $2300.

**Philadelphia, Pa.;** H. Perloff; three one-story brick garages, each 11x20.4; southwest corner 16th street and Fisher's lane; $1000.

**Philadelphia, Pa.;** H. Perloff; one-story brick garage, 15.6x20.4; southeast corner Smedley street and Fisher's lane; $700.

**Philadelphia, Pa.;** William H. Naylor; one-story brick garage, 16x20; rear 4228 Girard avenue; for R. G. Savage; $550.

**Philadelphia, Pa.;** J. P. Fallon; one-story brick garage, 15.9x19; at 5931 Delancey street; for Charles Olsen; $500.

**Philadelphia, Pa.;** Jacob Bender; one-story brick garage, 18x25.6; southeast corner 16th and Ontario streets; for J. D. Barcley; $1000.

**Philadelphia, Pa.;** John Palaia; one-story brick garage, 15x20; west side Carlisle street, south of Ellsworth street; for Peter Ciancula; $775.

**Pittsburgh, Pa.;** George E. McKee, Alger and Beechwood building; one-story garage, 20x20; for Grote & Grote, Frick building; $2000.

**Philadelphia, Pa.;** Evans Construction Co., 9 S. 18th street; one-story garage for William J. Clark; $7500.

**Allentown, Pa.;** M. G. Reinhard, Emans, Pa.; one-story garage, 40x48; for Frederick Gernard, 46 South 30th street; $3000.

**Shamokin, Pa.;** East End Lumber Co., Chestnut and Franklin streets; one-story garage, 25x85; for Shamokin Milling Co.; $3500.

**Philadelphia, Pa.;** M. J. Walsh; one-story brick garage, 95x134; at 6800 Quincy street; for J. Russell Walsh; $15,000.

**Philadelphia, Pa.;** John W. Janyszeh; one-story brick garage, 18x14; north side Clementine street, west of Gaul street; for Alexander Brokaris; $500.

**Philadelphia, Pa.;** J. Nieman; one-story brick garage, 17x28; at 1732 North Uber street; for S. Silverstein; $1150.

**Pottstown, Pa.;** F. H. Keiser & Co.; two-story garage and service station; for William P. Young, Third and Hanover streets; $25,000.

**Milwaukee, Wis.;** F. Luenzman Co., 1912 Prairie street; one-story garage, 28x50; for Milwaukee Western Fuel Company; $4000.

**Milwaukee, Wis.;** Edward Steigerwald & Sons, 2303 Galena street; one-story garage, 59x101; for N. Wieand & Son, 2408 Libson avenue; $1100.

**West Allis, Wis.;** J. J. Gauser, 439 64th avenue; two one-story garages, 20x24 and 20x60; for Theodore Muller, 6324 Greenfield avenue; $3000.

## Garages and Repair Shops In New Buildings

**Judsonia, Ark.;** The Dulin & Graves Auto Co. will open a new garage.

**Denver, Col.;** R. C. Campbell, 1720 Ogden street, is building a garage at an estimated cost of $2000.

**Denver, Col.;** The Swenson Auto Co., distributors of Republic trucks, is erecting a $20,000 garage and salesroom at 20th and Champa streets.

**Savannah, Ga.;** The J. C. Lewis Motor Co. is planning the erection of a two-story garage.

**Chicago, Ill.;** The Staver Motor Car Co. is planning the erection of a new automobile shop at the northwest corner of Garfield boulevard and Federal street.

**Kewanee, Ill.;** P. V. Lucke will open a modern and completely equipped Overland service station at 219 Windsor court.

**Larchwood, Ia.;** Larchwood Auto and Supply Co. plans to erect a new garage.

**Waucoma, Ia.;** Slifka Brothers will occupy a new garage which is being built by Joseph Slifka.

**Alma, Kan.;** George A. Miller will erect a new garage 70 by 85 feet. It will be of medium size.

**Jennings, La.;** Jennings Motor Car Co. is erecting an automobile garage, 60 by 150 feet. It will cost $11,000.

**Kent City, Mich.;** George W. Barrett is preparing plans for a new 50x100 foot brick garage.

**Marquette, Mich.;** E. W. Jones, 112 W. Spring street, will erect a new 62x122 foot building, two stories high and at the cost of $15,000.

**New York, N. Y.;** The Almar Mfg. Co. will erect a garage in Long Island City. The building will be four stories high and the dimensions will be 50x100 feet.

**Pottstown, Pa.;** W. P. Young & Co. is planning the erection of a two-story garage and service station on High street at an estimated cost of $25,000.

**Sioux Falls, S. D.;** T. G. Edmison is planning considerable extensions and alterations to his prospective quarters on South Phillips avenue. The garage will handle Ford cars and will be three stories high.

**Salt Lake City, Utah;** Ripple Brothers are planning the erection of a garage 66x52 feet on Edison street.

**Baileys Harbor, Wis.;** Arthur Wilson will occupy a new garage which has been erected.

**Modena, Wis.;** Albert Serum will open a garage.

## Alterations, Improvements and Additions.

**Crescent City, Cal.;** G. A. Webb is remodeling the store and garage. Automobile accessories are carried.

**Bland, Mo.;** H. A. Kaeding will erect a new 50x40 foot garage on site of old one.

**Butler, Mo.;** Norfleet & Ream are making extensive additions and completely remodeling the public garage. The show room will be 20 by 35 feet.

**St. Louis, Mo.;** The Brandle Motors Co. is remodeling its quarters in the Chevrolet building.

**Minden, Nev.;** Danger & Lareen are building a 70x100 foot addition to their garage.

**Columbus, O.;** The Ohio-Jeffery Co. is remodeling a new salesroom and service station on East Broad street. The company is central Ohio distributor for Jeffery trucks.

**Memphis, Tenn.;** A. Simon Saddlery Co. has added to the plant a repair shop.

**Beloit, Wis.;** J. H. Saris will erect a two-story brick building. It will be 20x142 feet. He has the Ford agency.

**Sheboygan, Wis.;** Sheboygan Auto Co., 816 Niagara avenue, plans to erect an addition to their garage.

# SECURITIES AND GENERAL MATERIALS MARKET

## Condition of Automobile Stocks and the Markets for General Material As Reported at Middle of Last Month and Corresponding Day This Month

**The tabulations following show the advance or decrease in the quoted stock exchange prices of the several active motor vehicle and kindred securities, and of the change in prices of the general material market, as it relates to the motor car industry.**

### *Automobile Securities Quotations*

| | July 12 | | Aug. 9 | |
|---|---|---|---|---|
| | Bid | Asked | Bid | Asked |
| Ajax Rubber Co | 68 | 71 | 66 | 67 |
| J. I. Case, T. M., Co., pfd | 78 | 84 | 78 | 84 |
| Chalmers Motor Co., com | 9 | 13 | 5 | 10 |
| Chalmers Motor Co., pfd | .. | .. | .. | .. |
| Chandler Motor Car Co | 82 | 93 | 83 | 83¾ |
| Chevrolet Motor Co | 92 | 94 | 92 | 95 |
| Fisher Body Corp., com | 34 | 37 | 40 | 40¾ |
| Fisher Body Corp., pfd | 87 | 89 | 88½ | 90 |
| Fisk Rubber Co., com | 74 | 76 | 74 | 76 |
| Fisk Rubber Co., 1st pfd | 102 | 106 | 104 | 106 |
| Fisk Rubber Co., 2nd pfd | 92 | 95 | 92 | 95 |
| Firestone Tire and Rubber Co., com | 122 | 126 | 114 | 119 |
| Firestone Tire and Rubber Co., pfd | 104 | 106 | 102 | 105 |
| General Motors Co., com | 113 | 114 | 115 | 115⅛ |
| General Motors Co., pfd | 90 | 91 | 87⅞ | 88¼ |
| B. F. Goodrich Co., com | 47½ | 48 | 49 | 50 |
| B. F. Goodrich Co., pfd | 104 | 106½ | 105 | 106 |
| Goodyear Tire and Rubber Co., com | 202 | 205 | 195 | 198 |
| Goodyear Tire and Rubber Co., pfd | 105 | 107 | 105 | 107 |
| Grant Motor Car Corp | 3 | 6 | 3 | 6 |
| Hendee Mfg. Co | .. | .. | 31 | 32 |
| Hupp Motor Car Corp., com | 2½ | 3¼ | 2½ | 3½ |
| Hupp Motor Car Corp., pfd | 72 | 76 | 72 | 80 |
| International Motor Co., com | 5 | 10 | 5 | 10 |
| International Motor Co., 1st pfd | 20 | 50 | 30 | 50 |
| International Motor Co., 2nd pfd | 10 | 30 | 10 | 20 |
| Kelly-Springfield Tire Co., com | 46 | 50 | 45¼ | 49 |
| Kelly-Springfield Tire Co., pfd | 87 | 95 | 87 | 95 |
| Lee Rubber and Tire Corp | 17 | 17½ | 21¼ | 21¾ |
| Maxwell Motor Co., Inc., com | 46¼ | 47 | 34⅝ | 35¼ |
| Maxwell Motor Co., Inc., 1st pfd | 64 | 68 | 64 | 65 |
| Maxwell Motor Co., Inc., 2nd pfd | 29 | 30½ | 24¼ | 25 |
| Miller Rubber Co., com | 180 | 185 | 165 | 175 |
| Miller Rubber Co., pfd | 105 | 103 | 102 | 104 |
| Packard Motor Car Co., com | 135 | 145 | 126 | 132 |
| Packard Motor Car Co., pfd | 95 | 98 | 94 | 99 |
| Paige-Detroit Car Co | 26 | 28 | 25 | 27 |
| Peerless Truck and Motor Corp | 13 | 16 | 13 | 15 |
| Portage Rubber Co., com | 157 | 161 | 145 | 150 |
| Portage Rubber Co., pfd | .. | .. | .. | .. |
| Regal Motor Car Co., pfd | .. | 22 | .. | .. |
| Reo Motor Car Co | 25 | 27 | 25 | 27 |
| Saxon Motor Car Corp | 17¼ | 18½ | 18½ | 19⅛ |
| Springfield Body Corp., com | 5 | 15 | 5 | 15 |
| Springfield Body Corp, pfd | 15 | 30 | 20 | 40 |
| Standard Motor Construction Co | 11 | 12 | 11 | 12 |
| Stewart-Warner Speed. Corp | 62 | 64 | 61 | 63 |
| Studebaker Corp., com | 58¾ | 59 | 53⅛ | 53½ |
| Studebaker Corp., pfd | 93 | 94 | .. | 96 |
| Swinehart Tire and Rubber Co | 60 | 65 | .. | 60 |
| United Motors Corp | 25 | 25½ | 23⅝ | 23⅞ |
| U. S. Rubber Co., com | 59½ | 60½ | 61⅝ | 62 |
| U. S. Rubber Co., pfd | 107 | 108 | 106½ | 109 |
| White Motor Co | 47 | 47½ | 46½ | 47⅝ |
| Willys-Overland Co., com | 31¾ | 32 | 32¾ | 32⅞ |
| Willys-Overland Co., pfd | 93½ | 94 | 95⅝ | 99 |

### *General Market Prices*

| | July 15 | Aug. 15 |
|---|---|---|
| Antimony | 59 | .. |
| Iron, foundry, S., ton | 49.50 | 49.90 |
| Iron, foundry, N., ton | 47.50 | 47.00 |
| Iron, Bessemer, ton | 50.00 | 52.70 |
| Steel, Bessemer, ton | 95.00 | 90.00 |
| Copper, electric, 100 lbs | 30.00 | 27.00 |
| Copper, lake, 100 lbs | 29.50 | 29.50 |
| Lead, 100 lbs | 11 | 10⅞ |
| Tin, 100 lbs | 59½ | 62¾ |
| Petroleum, Kan., cr., bbl | 1.70 | 1.90 |
| Petroleum, Penn., cr., bbl | 3.10 | 3.25 |
| Linseed oil, raw | 1.24 | 1.24 |
| Lard, oil, prime | 1.86 | 1.88 |
| Fish oil, Manhaden, br | 84 | 84 |
| Sulphuric acid, 60 | 1.50 | 1.50 |
| Cottonseed oil, bbl | 15.50 | 15.75 |
| Silk, raw, Italy | 7.40 | .... |
| Silk, raw, Japan | 6.95 | 7.47½ |
| Rubber, fine, up-river, Para | 67½ | 69 |
| Tire, scrap | 7 | 6½ |
| Steel, open hearth, ton | 95.00 | 90.00 |

**DOMESTIC CRUDE OIL PRICES.**

The prices of crude petroleum at the wells during the middle of the month of August were:

| | | | |
|---|---|---|---|
| Pennsylvania dark | $3.25 | Corsicana light | $1.90 |
| Mercer black | 2.23 | Corsicana heavy | 1.05 |
| Cabell | 2.47 | Electra | 1.90 |
| New Castle | 2.10 | Henrietta | 1.90 |
| Corning | 2.50 | Caddo, La., 38° | 1.90 |
| Wooster | 2.28 | Caddo, La., heavy | 1.00 |
| North Lima | 1.98 | Healdton | 1.10 |
| South Lima | 1.98 | Moran | 1.90 |
| Indiana | 1.88 | Strawn | 1.70 |
| Princeton | 2.02 | De Soto | 1.80 |
| Somerset 32° | 2.30 | Thrall | 1.90 |
| Ragland | 1.10 | Crichton | 1.40 |
| Illinois above 30° | 2.02 | Canada | 2.28 |
| Kan. & Okla | 1.90 | Humble | 1.00 |
| Plymouth | 1.93 | Cal., 37 grav | 1.32 |

**Naphtha.**

| | 10-gal. drums | |
|---|---|---|
| | Under 100 cases | 100 cases and over |
| Benzine, 59-62° | 35¾ | 34¼ |
| Stove | 36 | 35½ |
| Auto, 68-72° | 41½ | 41 |
| Naphtha, 72-76° | 45½ | 45 |

| | In cans and cases | | |
|---|---|---|---|
| | Under 100 | 100-199 | 200-299 |
| Benzine, 59-62° | 32½ | 32¼ | 32 |
| 73 a 76° | 42¼ | 42 | 31¼ |
| Stove | 32¾ | 32½ | 32¼ |
| Auto, 68-72° | 38¼ | 38 | 37¾ |

**NEW YORK CITY PRICES.**

New York City prices for petroleum and its products were:

**Petroleum.**

| | | | |
|---|---|---|---|
| Crude, barrels, a gallon | 15a18 | Fuel, 31° | 10½ |
| Refined barrels | 13 | Fuel, 34° | 11 |
| Tank wagons delivery | 9 | | |

**Naphtha.**

| | | | |
|---|---|---|---|
| Garages | 24 | V. M. & P. deod., in steel | 28 |
| Consumers | 26 | V. M. & P. deod., in wood | 26 |

**Gasoline.**

| | | | |
|---|---|---|---|
| Gas machine, steel | 41 | 68-72° steel | 32 |
| 72-76° | 38 | 68-72° wood | 28 |
| 72-76° wood | 38 | | |

### *Foreign Trade Opportunities*

(Address Bureau of Foreign and Domestic Commerce, Washington, D. C., Giving Number, Which Will Forward Correspondence, Unless Otherwise Stated.)

24,967. An agency is desired by a firm in Italy for low priced motor cars from 8 to 12 horsepower, and for motor car accessories. Correspondence should be in Italian or French.

25,035. A man in Venezuela desires an agency for patent medicines, electrical appliances, oil extracting machinery, steam and gasoline engines and motor cars and launches. Correspondence may be in English. Reference.

25,051. A man in Chile desires to establish business relations with exporters of bicycles, automobiles and accessories, typewriters, computing machines, etc. Payment will be made by 60 days sight draft. Reference.

25,102. An agency is desired by a company in France for the sale of tools, artificial leather, automobile accessories, fire extinguishers, novelties, etc., and small motor wheels to be attached to ordinary bicycles. Correspondence may be in English. References.

25,109. An agency is desired by a man in Spain for the sale of moderate priced automobiles which could retail in Spain at from $1200 to $1400. He wishes to sell on a commission basis. Correspondence should be in Spanish or French. References.

# Giving the Used Cars a Chance In Motordom

## Climbing the Hills of Prejudice, Overcoming Set Price Obstructions and Making Steady Headway to a Fair Market They Advance In a Great Campaign for Satisfied Autoists

**MOTORDOM cannot allow the used car problem to be slurred over. Too much importance cannot be attached to used car values. The owners', manufacturers' and dealers' interests are too vital to allow depreciation to be fixed by publications or anybody whose sole aim is the deflation of actual values.**

**The Automobile Journal and the Accessory and Garage Journal maintain that the values placed in a car by a manufacturer shall be maintained; that added values given a car through hundreds of dollars spent upon it in new equipment and replacements, shall not be wiped out by a business crime, the attempted establishment of set prices on used models, an effort which is foredoomed to failure.**

**There is no good reason to sacrifice all the cars in the land to the greed of any individual or body, or the misfortune of a few motorists who may be forced by some unfortunate, personal reason, to dispose of their motor vehicles.**

**We maintain that a car shall be appraised for its actual service and worth; that when it is resold it shall be made fit and give its owner full satisfaction and make him or her a confirmed motorist. This is the unshakable and correct viewpoint and the reasons for it are the reasons which actuate the Automobile Journal and the Accessory and Garage Journal. These are, viz.:**

1. **To stimulate business.**
2. **To benefit the manufacturer.**
3. **To protect the owner.**
4. **To make a real business for all dealers.**

**These aims are accomplished by spreading the facts of true motor car worth. As this is done, inevitably more used cars will be sold, more new cars will be sold, more of everything that goes with them will be in demand, and every interest in human life and affairs linked with automobiles will know more activity and have more prosperity.**

(From the Automobile Journal.)

IT IS found, in the present stage of the trade, that more attention must be paid to the matter of giving the used car a chance. Five years ago the car which had seen a service of six months to two years, had to bear more of a load of the prejudice which attaches to age than the highly standardized models of the present period. Changing models, changing lines, soon make the car of a few years back so extremely obsolete in appearance that the ordinary citizen would not relish being seen in it by his neighbors. The first prejudice to be overcome in giving the used car a chance, therefore, in a resale proposition, is objection to its outward aspect. This calls for outlays, of course. The surprising fact, however, is not so much that an outlay is necessitated, but that a most astonishing improvement can be secured by moderate outlay. In case the used car is entirely modern in body lines, new paint alone makes it entirely presentable to the road. General motor excellence in the casual run of cars simplifies the matter of alterations remarkably. It is, of course, true that the vital parts of a car admit of alterations. Attention to the internal parts is the most highly important in the regard of service in its last analysis.

### Overcoming Second Sale Prejudices.

The second hand or "slightly used" car comes into the motor car market in so many ways as to almost defy explanation. The assumption that no car is thus thrown upon the market unless "something is the matter with it," is another inborn prejudice met in the used car market that is simply a relic of the old horse trading days. If this view is suffered to exist but temporarily there is this at least to be said in favor of the machine which could not be put forward in the case of the animal. A mechanical overhauling will restore a worn or abused car to service, while an ill-used horse is not so liable to regain its powers, even though wisely treated by an excellent veterinary. Besides, it is an utter impossibility to put a new body on a horse, although something might be done in the way of harness fittings, which would roughly correspond to a new top or a new hood.

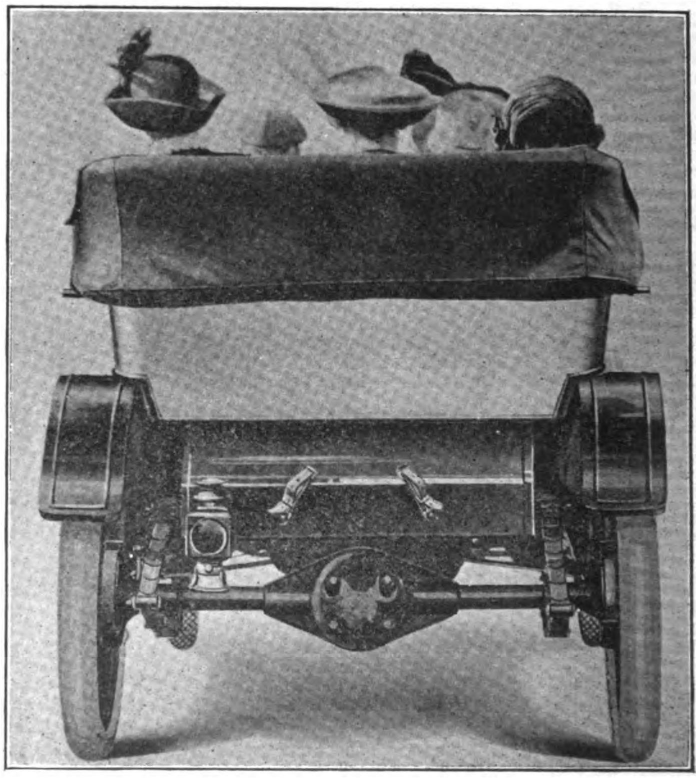
### Delights in a Used Car.

The statisticians have developed that there are still millions of prospective purchasers of motor cars, but have not been able to supply the missing reason just why these men of means have not embarked on the sea of motordom.

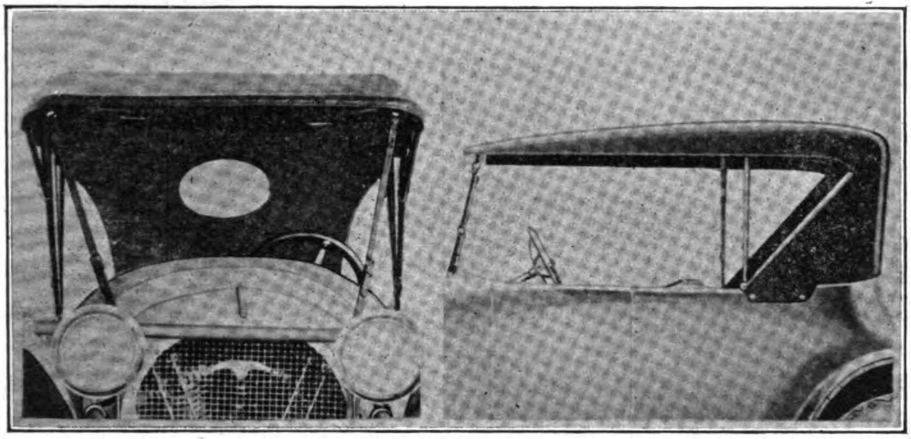
Perhaps this reason or explanation is found in the experience of the average motor car dealer, who will recite numerous names of persons who have called in, looked over the cars, had demonstrations and then walked out again without placing their name on the dotted line. These same individuals repeat this performance year after year and to all outward appearances are absolutely sincere in their intentions, but for some unknown reason can never bring themselves to the point of buying.

There looms up in the average mind many things that cause one to hesitate in taking up motoring, the question of expense, depreciation on investment and possibilities of accident. These bugaboos of course array themselves in the mind before the person has had the opportunities to experience the many conveniences and pleasures that come with the ownership of a motor car.

Such persons are not looked upon as good prospects for new cars, but to the live dealers with a strain of psychology in handling their business there should be little difficulty in inducing these hesitating prospects to enter motordom via the route of the used car. Every dealer practically has one or more used cars on his hands to dispose of and their mar-



When Full Satisfaction Is Obtained for the Family the Used Car Owner Becomes a Confirmed Motorist.



If It Has a Top Like This—Give It a 1917 Top Like This.

keting should be easiest among a class of such prospects, as his arguments are along a line that combat practically every objection of those who are holding off for the reasons enumerated.

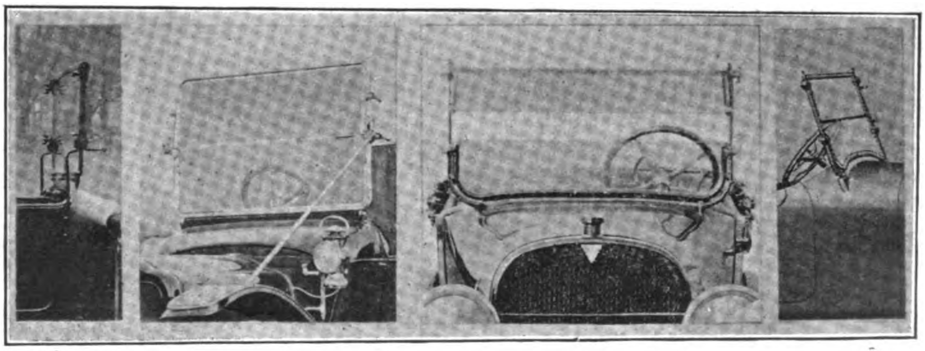
In the first place the purchaser does not stand any great depreciation and if he shows judgment he gets a car, that at the figure paid, is far better than most new models he could have secured at the same price. With the lower first cost, no material depreciation, lower insurance rate and the fact that the wear and tear on the car becomes less noticeable if it has been used to some extent, are all factors to encourage the novice in starting as a motorist.

The essential features about a motor car include those mechanical functions that cause it to run as long as gasoline, oil and water are supplied. Decorations, appointments and extra equipment are a matter of personal taste and pride. Of course, in some of the professional callings or in certain lines of business there is considerable value vested in the appearance of a car, but for the man who is entering the sport for pleasure and does not feel warranted in making a large outlay, strict attention to the looks of a machine is not the rule.

### The Making of a Solid Customer.

Assuming that the influence of these factors has resulted in the sale of a previously used car to a person who is engaging in his initial motoring experience, in nine cases out of 10 it will be found that the purchaser has not only received satisfaction from his purchase, but that he will ultimately become a prospect for either another second sale car or a new one. This is only a natural conclusion, as he finds that he cannot only get about his business with great facility, seeing more people in less time, accomplishing more and placing himself in a new atmosphere, but has also established a new environment in his home to the satisfaction of all his family. Sunday no longer finds him sitting about the house all day and indifferent to his surroundings, but out in his car with his family, enjoying the refreshing air and country scenery. It is a new and healthy life that he has entered together with his family and they all become attached to the car regardless of his pedigree or embellishments. Here is a man that is getting all the fundamental pleasure and enjoyment that it is possible to derive from motoring.

He builds a garage for his car after finding that it is cheaper and more convenient than placing it in the public garage and in his spare time becomes absorbed in the interesting work of caring for his machine, making adjustments, minor repairs and cleaning it up. In this process all the imaginary troubles that confronted him before he became an owner disappear and he is transposed into a motoring enthusiast with the assurance that he will remain one until his death unless misfortune overtakes him. Thinking of gears transmissions, carburetors, magnetos and other seemingly mysterious mechanisms no longer baffles his reason, but serves to stimulate his interest and he will soon be talking "car" almost as fluently as he discusses his business.



The Older Styles of Windshields May Stand Replacement by One of the Sloping Models on the Right.

Here is an individual, now a potential part of the great market for motor cars, parts and equipment, that might have been a factor several years earlier had anyone taken the trouble to educate him up to the pleasures of motoring and to dispel his doubts regarding the operation and maintenance of a machine. His ignorance of the subject kept him out of the game and in all his visits to dealers he found none who understood his attitude so that they could apply the convincing argument that would make him a motorist.

The ownership of a car with him is now indispensable; he no longer looks upon it as an expense or possible waste, but goes to the other extreme in most cases and buys all the necessary accessories that he can afford. When he got his car it had been stripped of about everything except the necessary running units. For a time it proved satisfactory in this condition, but he soon learned to appreciate the value of a spotlight, an extra tire and rim, engine tire pump, one man top, self-starter and numerous other appliances that lessen the care and make more pleasureable the operation of a car.

With full equipment and a new coat of finish on his car he is still several hundred dollars in pocket and possesses the same value in a motor car that another owner who had purchased the same make and model of car new. His car develops the same speed, has the same riding qualities and he can tour as extensively as he wishes. When the time comes and conditions warrant the purchase of another car he will probably want a new one and when he decides to act on this desire he will no longer haunt the salesrooms, using up the dealers' time and causing them untold disappointments, but will buy quick.

This suppositionary case reveals a factor in the motor trade that has too long been overlooked and one that must receive immediate attention to bring about a more healthy condition in the market for new cars.

It is foolhardly to knock a used car, as it only serves to place the prospect on his guard or cause him to have misgivings about the whole business. If he can't see his way to the purchase of a new car the dealer should attempt to discern the reasons for his attitude and work on them, not give him up as a poor prospect or time waster. The merit of the used car should be explained in detail and even advocated as a machine with which the prospective motorist should make his initial effort, as there are thousands who will come into the motorists' realm if they are taught to creep, so to speak, before they are asked to walk.

Every additional motorist means stimulus to the garage and dealers' business and also forms the nucleus of a demand for more cars which will materialize from year to year. All have founded their success largely upon the policy of devoting time and energies to prospects and giving them service. In this respect the business contains no elements foreign to the banking, merchandising business or professional callings.

# ACCESSORIES AND EQUIPMENT

### TRANSMISSION LINING.

There are few things as uncomfortable as a grabbing clutch, or a harshly engaging brake band. The Ford low speed clutch, reverse and service brake action is dependent upon contracting bands, which must be lined with some sort of fabric to make them efficient. For this purpose the Advance cork insert transmission lining has been designed. It is made up of a tough fabric into which are inserted pieces of cork. The manufacturers claim that when a car is fitted with this type of lining the clutch, as well as the service brake, engages smoothly and with a velvet action, due to the soft frictional bearing of the cork inserts.

**Manufactured by Advance Automobile Accessories Corp., Dept. G 3-1, 56 East Randolph St., Chicago, Ill. Write for prices.**

### IMPROVED BEMUS TIMER.

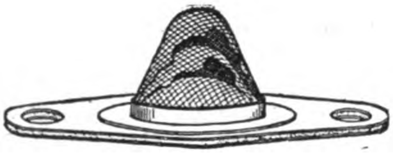
The 1917 Improved Bemus Timer is somewhat different from the older models, as a number of improvements have been embodied. This timer differs from the regular Ford timer in that there is no constant rolling contact of the brush with the timer body. In the Bemus timer four ball contacts are mounted in the case, and contact is made against the brush, which is mounted on an eccentric. The brush is so designed that contact of the four points is made at different points, thus minimizing wear.

**Manufactured by Motor Specialties Co., Waltham, Mass. Price $2.**

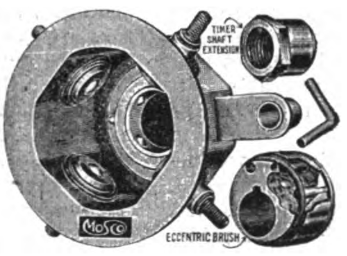
### GASCO ECONOMIZER.

Proper vaporization of fuel is a problem that is facing every automobile owner today. To get full power from an engine the mixing of gasoline and air in the proper proportions is necessary. The makers of the Gasco economizer claim that this device promotes vaporization, prevents back fire into carburetor and reduces carbon depositization. The Gasco economizer is a device which is attached to the intake manifold, between that part and the carburetor. It consists of three screens of copper gauze, in a cone shaped arrangement, one within the other. It is said that the gas mixture passing through the screen is thoroughly broken up, forming a fine vapor, which materially lessens the difficulty of starting the engine. A 30-day trial of the device is allowed and if not satisfactory it may be returned and money will be refunded.

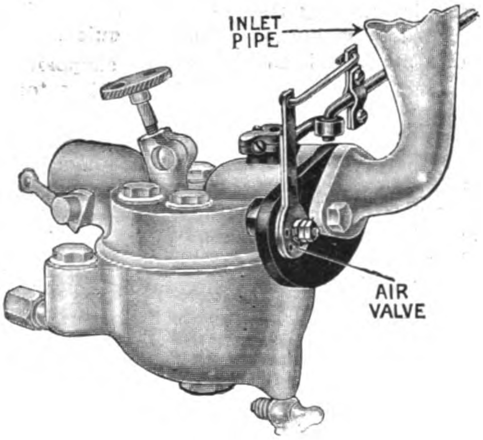
**Manufactured by the Gasket Supply Co., 18th and Ludlow Sts., Philadelphia, Pa. Price, $1. Special proposition to dealers.**



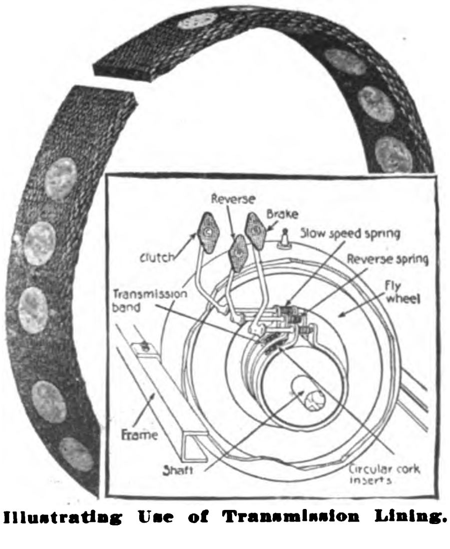
Gasco Economizer.



Improved Bemus Timer.



Gasoline Economizer.



Illustrating Use of Transmission Lining.

### GASOLINE ECONOMIZER.

It has been known for a long time that with the increase in speed of a gasoline engine, more air could be admitted and an increase of power obtained. For accomplishing this purpose the New York Automatic Gasoline Economizer has been designed. This device, attached between the intake manifold and the carburetor, has a lever which is fastened through suitable linkage to the throttle rod. As the throttle is opened a series of holes in the device are opened by the movement of the air valve and a certain amount of air is admitted which varies with the throttle position. The makers claim that when once adjusted the device requires no further attention.

**Manufactured by New York Coil Co., 338-340 Pearl St., New York City. Price $2.**

### AD-EL-ITE CARBON REMOVER.

One of the most frequent troubles that assails the motorist today is the carbon evil. Loss of power, preignition and poor compression are three symptoms of this trouble. Ad-El-Ite is a liquid carbon remover, which the makers say will effectually remove all of the carbon deposits from the combustion chamber. In using this liquid the engine is first run until it has thoroughly warmed up, the spark plugs are then removed and about a tablespoonful of Ad-El-Ite is poured into each cylinder. The engine is then allowed to stand for half an hour or over night, the spark plugs are again removed and the engine cranked over until the surplus vapor is ejected from the cylinders. Upon the replacing of the plugs and the starting of the engine the carbon is blown through the exhaust, in the form of vapor, or in chunks.

**Manufactured by Adams & Elting Co., Chicago, Ill. Prices for ½ pint can, 50 cents; one pint, 85 cents; one quart, $1.50.**

### YORK CARBURETOR PERFECTOR.

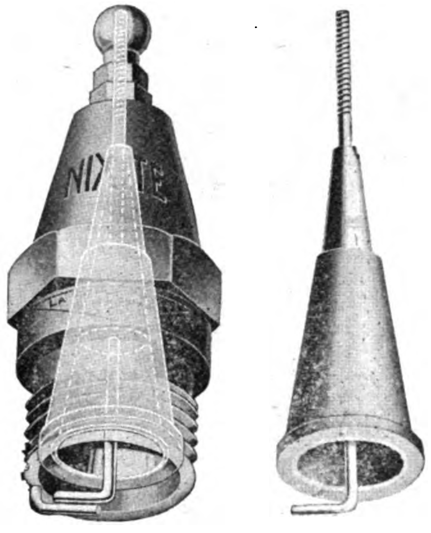
It has been scientifically proved that but a small percentage of the gasoline put into the tank is converted into useful power. The problem of a more efficient engine is troubling the engineers at the present time. The manufacturers of the York Carburetor Perfector claim a great saving in gasoline, and an increase of power when this device is used. The York carburetor perfector is fitted to the joint between the carburetor and intake manifold, and has a screen incorporated which is designed to break up the gasoline particles. The rapid passage of gas causes two little valves to open in the sides of the device, admitting air, which is in proportion to the speed of the engine. As the engine is slowed down the gas passing through the manifold does not have such speed and, therefore, the valves are allowed to close.

**Manufactured by York Carburetor and Auto Accessories Co., Inc., 680 Woodward Ave., Detroit, Mich.**

### VAPOR INSPIRATOR.

The Frog Vapor Inspirator is an ornamental emblem in the shape of a frog which is attached to the radiator cap and contains in its mouth an automatic valve that permits passage of air to the inside of the radiator. The overflow pipe is fitted with a water trap, and from this trap a pipe leads to the air intake of the carburetor. The circulation of air is through the frog, over the warm water in the radiator and to the carburetor. This circulation permits a certain amount of water vapor to enter the carburetor and the makers claim a better running engine.

**Distributed by H. & H. Specialty Co., Inc., 755 Boylston St., Boston, Mass.**



Nixite Plug and Electrode.

Martin Inner Tube Case.

### INNER TUBE CASE.

There are a number of important factors to be considered in the preservation of spare inner tubes that the average motorist is prone to forget. The life of rubber is materially shortened by exposure to light, moisture to a certain degree, oil or gasoline. Tubes thrown carelessly into a tool box depreciate very rapidly and are often rendered worthless by frictional contact with sharp edged and pointed tools. The Martin inner tube cases, which are made for either one or two tubes are of water proof enameled cloth and offer protection against light as well as abrasion. They offer a practical solution to the exposure problem and pay for themselves by preserving tubes and saving the patients of the autoist.

**Manufactured by the Martin Manufacturing Co., Lancaster, Pa. Price for single tube case, 35 cents double case, 50 cents.**

### NIXITE SPARK PLUG.

A plug which is claimed to be entirely different from anything now on the market is called the Nixite Spark Plug. The electrodes, as will be noted in the illustration, are so designed as to permit a broad, thick spark, which is claimed to result in both quick and perfect combustion. The insulating material is a new product, called Nixite, and is mounted inside a special steel shell, which offers protection from breakage. The exterior or outside part of the plug is similar in appearance to an ordinary plug, but the material at the top is Bakelite. This material offers protection against breakage from outside blows. The manufacturers cover the plug with a "life" guarantee and state that any part of the plug will be replaced free of charge if returned to the factory in the box, together with 10 two-cent stamps, to cover cost of packing and transportation.

**Manufactured by La French Power Spark Plug Co., 16-18 East First St., Columbus, O. Price $1 each.**

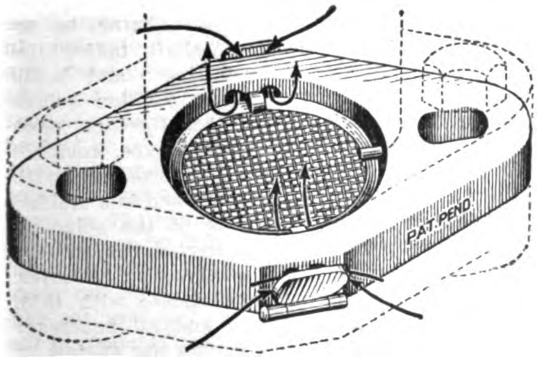
### FOOT AIR ACCELERATOR.

With the increase in engine speed there is an increase in the amount of air necessary for good combustion. To a certain extent the present day carburetor takes care of this excess air automatically. In many engines, however, particularly the Ford, there may be admitted air through the manifold when the engine speed is increased. The Foot Air Accelerator is made to be attached to the Ford car manifold, taking the excess air from around the heated exhaust manifold and connected with a foot pedal. The manufacturers claim six points in favor of the installation—more speed and power, less carbon, a cooler engine, flexibility and increase of 75 per cent. in gasoline mileage.

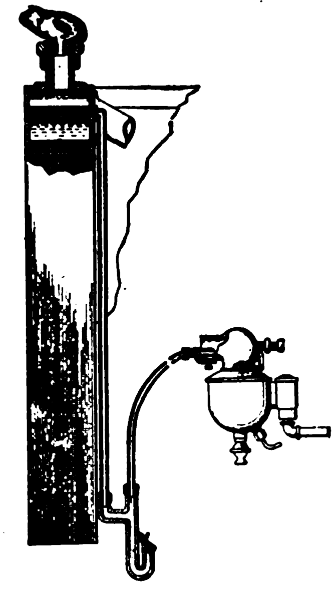
**Manufactured by Foot Air Accelerator Co., Cincinnati, O. Price, $6. Thirty-day trial.**

### TIRE CONSERVATION.

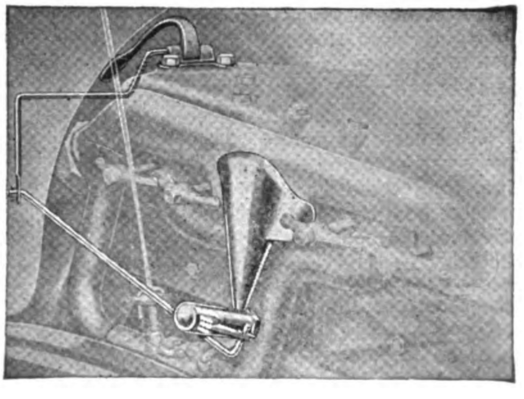
To aid motorists in cutting down tire costs, the Goodyear Tire and Rubber announces the publication of an entirely new and complete set of tire service bulletins, in which are set forth the various ways of obtaining more satisfactory tire



York Carburetor Perfector.



Frog Vapor Inspirator.



Foot Air Accelerator.

service. Instead of adopting the "Don't" method, this series of books is written from the positive viewpoint, and the motorist is told just what to do to get the most service from his tires. The bulletins come in a series of 11 and may be obtained by any automobile owner free of charge.

**Write to the Goodyear Tire and Rubber Co. of Akron, O.**

### D. & D. SPARK PLUG.

A recent innovation and a radically different spark plug has just been placed on the market. This plug consists of a moving ball imprisoned in a slotted cage, and so designed that the ball is held at all times between the plug electrodes, but free to move or vibrate. Due to the varying compression and the movement of the piston the ball is in motion constantly as long as the engine is running, thereby keeping all of the sparking surfaces free and clean from carbon or soot. It is also claimed that the ball has a condensing or storing effect, thereby increasing the intensity of the spark and making the explosion stronger.

**Manufactured by the D. & D. Co., 20 E. Jackson Blvd., Suite 810, Chicago, Ill. Price $2 each.**

### EDGERTON MOTOR TESTER.

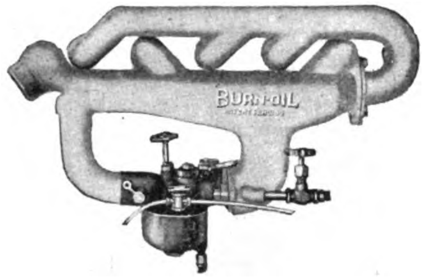
Whether all of the cylinders of an engine are working together and are each furnishing an equal amount of power can only be determined by comparison. Such a comparison is made easy by the use of the Edgerton motor tester. This device consists of a number of secondary wires which are connected by special easily attached clips with the spark plugs of all but one cylinder. Another wire from the tester is grounded to the engine base, thereby cutting out all but one cylinder. It is then an easy matter to find whether that particular cylinder is running smoothly. By altering the wire arrangement each cylinder may be tested in turn.

**Manufactured by R. G. Edgerton & Co., Suffolk, Va. Prices ranging from $2 to $9.50 according to number of cylinders and type of tester.**

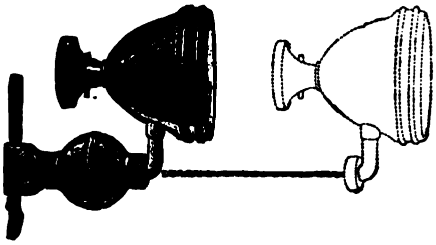
### BURN OIL DEVICE.

Every car owner should be interested in the problem of conservation of fuel and reduction of operating expense. To a certain extent the use of kerosene instead of gasoline as a fuel is the solution of one of the main difficulties. The Burn Oil Device is designed for attachment to the Ford car carburetor. When this device is used the engine is started on gasoline, then the three-way valve turned, kerosene admitted and the engine run on kerosene. In addition to this, water is admitted to the manifold through a needle adjusting valve. The whole device is simple and easily attached, the makers claiming a 50 per cent. saving on the cost of fuel.

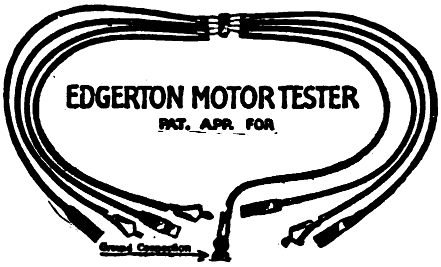
**Manufactured by Burn Oil Device Co., Inc., 129 N. Jefferson Ave., Peoria, Ill. Price complete, $30.**

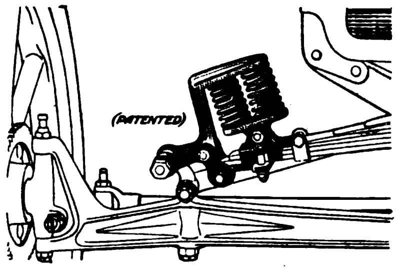


Burn Oil Device.

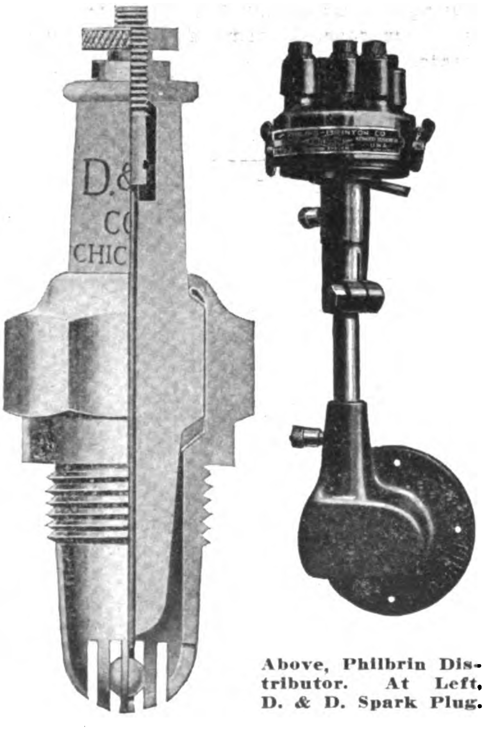


Anderson Auto Reel Light.





Champion Shock Absorber.



Above, Philbrin Distributor. At Left, D. & D. Spark Plug.

### ANDERSON AUTO REEL LIGHT.

Capabilities as a spot light, a trouble light, or a pleasure light are the three features which are claimed for the autoreel light. The lamp and bracket are finished in black enamel and fitted with a clear lens backed by 21 candlepower nitrogen bulb in a silvered parabolic reflector. The switch with "on" and "off" positions is located at the back of the lamp within easy reach. The lamp is mounted on a round housing, which contains 12 feet of extension cord wound upon a reel, and may be removed from the housing by turning the knurled nut for use as a trouble or pleasure light.

**Manufactured by Anderson Electric Specialty Co., 562 W. Van Buren St., Chicago, Ill. Price $7.50 without rear view mirror; $8 with mirror.**

### CHAMPION SHOCK ABSORBER.

The Champion shock absorber is designed primarily for Ford cars and consists of two coiled springs between a rocking member and a lever arrangement. The special feature of this device is the particular spring mounting, which is designed to keep the two coiled springs under tension at all times, thus adding to the flexibility of the suspension. A study of the sketch shows that side sway as well as road shocks are absorbed by the dual springs.

**Manufactured by Champion Shock Absorber Sales Co., Inc., Indianapolis, Ind. Price $15 per set of four.**

### PERFECT CUT-OUT.

The Perfect Cut-Out is designed to be attached to the exhaust line and requires no fitting. The maker asserts that not only does it answer the purpose of a cut-out for enabling the detection of "missing" cylinders, but it may also be used as a coupling for attaching either a whistle or exhaust heater. The device is guaranteed to be positive in action and absolutely gas tight.

**Manufactured by the Riverside Machine Works, New Castle, Penn. Prices from $2.50 for 1½ inch type to $3 for two inch. Special dealers' proposition.**

### PHILBRIN IGNITION SYSTEM.

The Philbrin high frequency ignition system for Ford cars consists of three units—a distributor, a non-vibrating coil and a switch. The distributor is attached to the timer shaft, taking the place of the present timer, and being mounted in an upright position brings this unit out of the oil and grease. The coil, a new non-vibrating type, compact in size, heat and moisture proof and with no moving parts, is contained in a molded case. The switch is of the selective type, permitting the use of two current sources, the Ford magneto or batteries. The system comes complete with thief proof locking device and all necessary brackets for mounting on the engine.

**Manufactured by Philips-Brinton Co., Kennett Square, Pa. Price, $27.50.**

### DASH AND TROUBLE LIGHT.

A handy little device for the motorist is known as the Comet combination dash and trouble light. The combination consists of two parts, a light bulb mounted upon a long, flexible cord, and an automatic spring winding reel, which is mounted in back of the dash. When in place the bulb is held up against the dash and forms a neat dash light. If it is desired to illumine any part of the car it is only necessary to take the light where it is wanted, the cord unwinding from the reel to such a length as is needed.

**Manufactured by Auto Specialty Co., 39 N. Cherry St., Galesburg, Ill. Price upon application.**

### MOTOR SET.

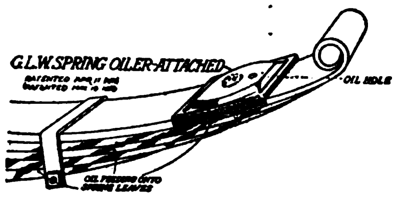
The secret for keeping down the "haulage home" bills lies in the possession of a good supply of practical tools in the car. Many an autoist has been obliged to pay for a few hours time of an expert mechanic because he did not have the necessary tools to do his own work. The illustration shows a set of 27 handy tools for making all ordinary road repairs. They are contained in an extra heavy leather bound canvas roll and are held in place by long leather straps.

**Manufactured by Goodell-Pratt Co., Greenfield, Mass. Price, $15.**

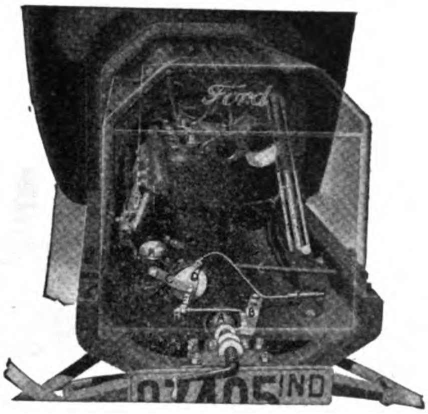
### AL-DEM-ER BRAKE CONTROL.

A chain is no stronger than its weakest link, neither is an automobile safer than its brakes. To be absolutely safe and perfect the brake action must be smooth acting, but not bind or lock. Many serious accidents have been caused by improperly adjusted or inefficient brakes. The Al-Dem-Er brake control is said to be positive in action and not self locking. With this device practically all of the brake band contacts with the drum, whether expanding or contracting type, and it may be applied to practically any car on the market. The brake arm may be set at a number of positions to fit the car.

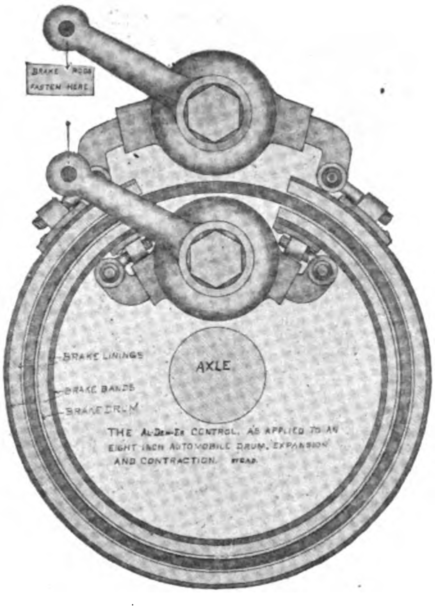
**Manufactured by George A. Diemer, 298 First St., Newburgh, N. Y. Prices from $10 up according to size and finish.**



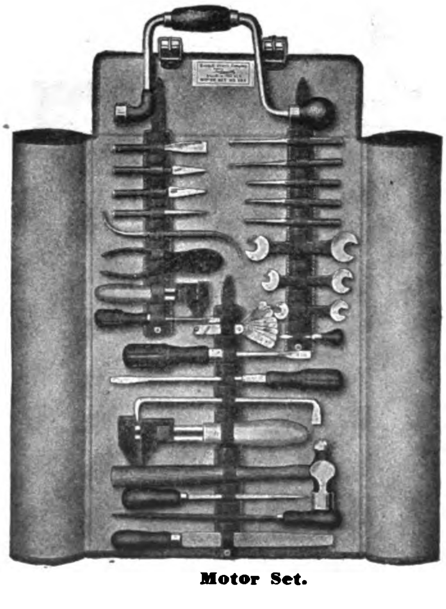
G. L. W. Spring Oiler Attached.



Bill Spark Retarder Applied.


BRAKE RODS FASTEN HERE
BRAKE LININGS
BRAKE BANDS
BRAKE DRUM
AXLE
THE AL-DEM-ER CONTROL, AS APPLIED TO AN EIGHT INCH AUTOMOBILE DRUM, EXPANSION AND CONTRACTION.

Al-Dem-Er Brake Control.



Motor Set.

### G. L. W. SPRING OILERS.

The G. L. W. automatic spring oilers consist of a high grade felt pad with an oil reservoir, contained in a rust proof polished blue metal case. This case snaps over the main leaf of the spring and is so constructed that different degrees of pressure is brought to bear on the felt pad, making the ends perfectly tight and oil proof, thus keeping the top surface of the main spring perfectly clean. At the sides the pressure on the felt is such that it permits a very slow seepage of oil, which fills the grooves along the entire side and is carried between the leaves by capillary action. Engineers are universally conceding that a large per cent. of automobile trouble is due to imperfect lubrication of springs and modern machines are being fitted with spring lubricating systems. This being the case, it is therefore practical that every operator fit his automobile spring sets with some sort of spring lubricating device. The manufacturers of this accessory allow a 30 days trial, with money refunded, if not satisfactory, and in addition to this make a sweeping guarantee to replace any spring on any automobile, if broken after a set of G. L. W. automatic spring oilers has been in use on the car springs three days.

**Marketed by the Hudson Sales Co., factory branch G. L. W. Spring Oiler Co., 7 East Jackson boulevard, Chicago, Ill. Price 20 cents each.**

### BARGAIN BULLETIN.

An interesting catalogue of automobile accessories and parts at very low prices is issued by what has been termed as one of the world's greatest automobile orphanages. This catalogue is fully illustrated and contains many bargains. As an instance of this a four-cylinder, 18 horsepower engine is priced at $60 complete.

**Write for this Puritan Bargain Bulletin No. 4619 to Puritan Machine Company, 51 10th St., Detroit, Mich.**

### BILL SPARK RETARDER.

The danger attendant upon hand cranking of a gasoline engine is due solely to the liability of a quick back throw, or as it is sometimes called, a "kick" of the crank, due to premature ignition occurring when the flywheel has not attained sufficient momentum to overcome the quick and powerful back thrust on the crankshaft. If the spark is so retarded as to cause explosion after the piston has passed the top of the stroke, the engine frequently does not receive enough impetus to carry the flywheel over centre and so "dies" from lack of power. The Bill Automatic Spark Retarder is said to prevent either of these possibilities in that by its use the spark is automatically retarded for starting, and upon the first explosion of the engine, advanced to predetermined running position. The device is not complicated, but the action is positive and the benefits derived should amply repay one.

**Manufactured by Bill Manufacturing Co., La Porte, Ind. Price, $3.50.**

### SNAPS.

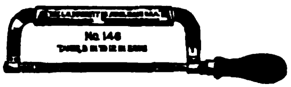
The word "Snaps" aptly describes the bargains to be found in the catalogue under that name. This bargain bulletin is issued to dealers only and quotes the prices upon many hundreds of standard articles far below the present market prices. Every dealer should have this booklet and may get it every month by writing on his letter head to

**Service Motor Supply Co., 1523-1531 Michigan Blvd., Chicago, Ill.**

### HACK SAW FRAME.

Many shops find it economical to use different length saws for different grades of work. This is impossible with a solid back hack saw. The hack saw frame illustrated is designed to take saws from eight to 12 inches and may be set to cut in any one of four directions. The saws are tightened into place by turning the handle and it is said that it cannot be cramped when saws are strained up nor will it tremble when used. All metal parts are polished and nickel plated.

**Manufactured by the L. S. Starrett Co., Athol, Mass. Price, $1.**



Hack Saw Frame.

### MOSCO TIMER.

Down in the grease and oil, on the front of the Ford engine, is the little device that controls the proper distribution of the fire to the spark plugs. This important little piece of mechanism is frequently neglected and until the engine begins to skip little attention is paid it. For this reason the Mosco manufacturers have designed a timer which they say requires but a minimum amount of attention. The shell is made of heavy pressed steel with aluminum finish. The insulating ring is of gray bone fiber. The terminals are insulated all the way through. The contact arm is of pressed steel and with the brush assembly may be purchased separately.

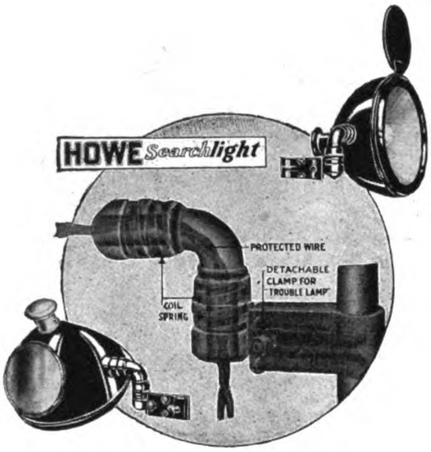
**Manufactured by Motor Specialties Co., Waltham, Mass. Write for prices.**

Mosco Timer.

### HOWE SEARCHLIGHT BRACKET.

Inasmuch as the idea behind the searchlight is the providing of a freely turning light, it is obvious that the bracket is of importance. One of the advantages of the Howe spotlight is its ingenious bracket arrangement. This bracket is of the universal joint type and both joints can be turned at the same time so that the lamp may be moved instantly at any angle, with but little effort. Although it may be moved easily, it is said that the lamp stays where it is directed until again moved because of the patented spring control. Two coil springs hold the two joints in a firm, even pressure, make it easy to burn, but hold it firmly wherever turned, unaffected by jars and vibration.

**Manufactured by Howe Mfg. Co., Chicago, Ill. Write for prices and catalogue of lamps.**

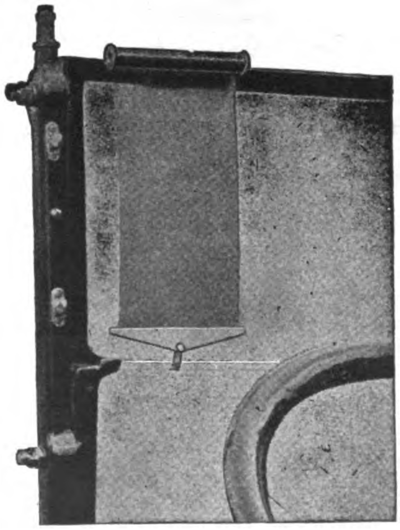


Howe Searchlight Bracket.

### SALES AUTO GLARE STOPPER.

Every driver has at some time or other suffered the inconvenience and is aware of the danger, due to the excessive glare from the headlights of another automobile which is approaching Some states in order to restrict the danger of accident resulting from the operator being blinded by this excessive light, have passed laws prohibiting the use of glaring headlights. The Sales Auto Glare Stopper is a simple device, consisting of a reel which may be attached to the top of the windshield. Upon this reel is carried a strip of colored celluloid, in a similar manner to which the ordinary window curtain is carried. At night the colored celluloid strip may be pulled out and fastened to the lower part of the windshield. Thus the blinding rays of the headlights are softened by the action of the celluloid and accidents are prevented.

**Manufactured by Sales Publicity Co., 25 Carlton Court building, Buffalo, N. Y. Price $1.**

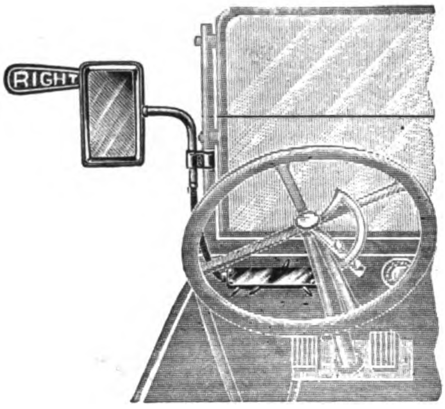


Sales Auto Glare Stopper.

### SEMAPHORE AUTO SIGNAL.

With the ever increasing number of automobiles on the streets and the consequent multiplication of the traffic problems the semaphore auto signal has been designed. This device consists of two units; the first a combination mirror and semaphore arm; the second a dash control. By the control the semaphore may be set in either of three positions, right, left or stop. The color scheme of the semaphore arm is striking, the letters on all positions are black, but for the three positions are on different colored fields. For right the field is green; for left, white, and for stop, red.

**Manufactured by Semaphore Auto Signal Co., Inc., 1790 Broadway, New York. Price, $12.50 complete.**



Semaphore Auto Signal.

### NEVILLE MORE-ROOM WHEEL.

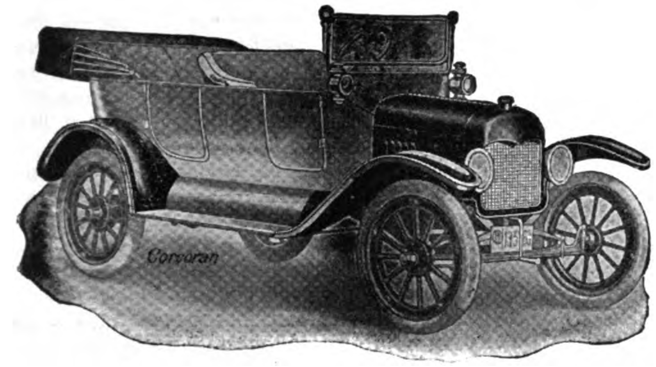
Much of the awkwardness and confusion attendant upon the climbing over the passenger on the front seat of an automobile could be eliminated if a tilting wheel were employed. The Neville More-Room Wheel is operated merely by pressing a button, releasing the lock which ordinarily holds the wheel perfectly rigid and permitting the same to be pushed forward eight inches. This wheel is made in sizes to fit nearly any car and in two styles. One has a polished aluminum centre with mahogany rim and the other a plain malleable iron centre finished in black.

**Manufactured by Neville Steering Wheel and Manufacturing Co., Congress St., Detroit, Mich. Write for specifications and prices.**

### BUICK TRANSMISSION LOCK.

Unfortunately for the car owner, the brains of "thiefdom" are being used daily to deprive him of his automobile. An automobile can be disposed of very easily, and it is frequently impossible for an owner to identify his car after it has been carefully disguised by the people of that class which subsists upon the labor of others. The Buick transmission is designed to take the place of the original dust cap, which is fitted to the transmission gear control lever. When in place and the key removed, it is impossible for the lever to be removed without breaking the lock. The device is neat in design and fitted with a Yale tumbler lock.

**Manufactured by the North Side Buick Sales Co., Sheridan Road, Chicago, Ill. Price, $6.50.**



Corcoran Crown Fenders.

## J. H. TONNEAU SHIELD.

Through front windshields the occupants of the front seats of motor cars are fully protected from dust and wind by these shields. It is a logical deduction therefore that the same should be done for those in the rear seat, and such is made possible by the J. H. Tonneau Shield, which is made in two styles, one for a solid front seat, the other for divided front seats. The former has been previously described. The latter is somewhat similar, but is divided in the middle or composed of two small shields, one for each seat, which when opened, give full protection, and by folding the two centre wings allows passage way to be used without any interference.

**Manufactured by J. H. Tonneau Shield Co., 1777 Broadway, New York, N. Y. Prices upon request. State name of car when ordering.**

## FRIESTEDT HYDRONIZER.

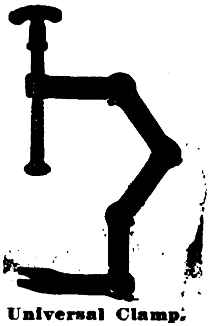
More miles per gallon of fuel, carbon not only prevented, but removed, clean spark plugs and a smoother running engine are some of the outstanding features claimed for this device. It operates automatically, from the moment the engine is started until it is stopped. Air is drawn in through the top of the device and thence through the water in the reservoir. In passing through the liquid the air is saturated with water and is drawn into the engine through the manifold connection in the form of water vapor.

**Manufactured by Friestedt Manufacturing Co., 2934-38 W. Lake St., Chicago, Ill. Price complete as illustrated, $6.50. Ten days trial. Special proposition for dealers.**

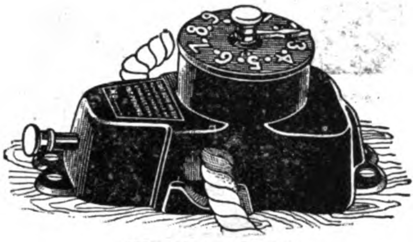
## ATOMIZING PRIMER.

Longest's Atomizing Primer is designed to make the starting of an engine in cold weather an easy operation, by making it possible to thoroughly vaporize the fuel before it is sent into the cylinders. The device is attached to the intake manifold, and is made in two models. Model one is filled by hand, while model two is connected directly with the gasoline supply system.

**Manufactured by Longest Bros. Co., Louisville, Ky. Price for model one, $2.50; model 2, $5.**

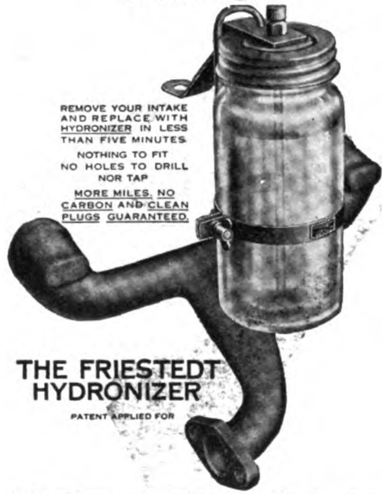


Universal Clamp.

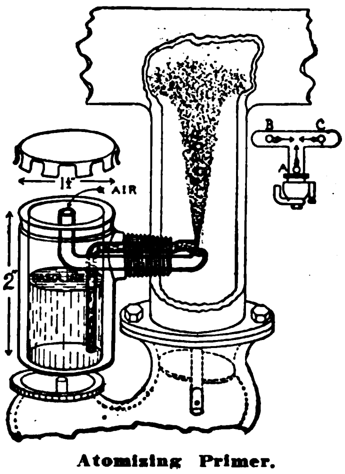


The Gant Meter.

Curtain Light.


REMOVE YOUR INTAKE AND REPLACE WITH HYDRONIZER IN LESS THAN FIVE MINUTES.
NOTHING TO FIT NO HOLES TO DRILL NOR TAP
MORE MILES, NO CARBON AND CLEAN PLUGS GUARANTEED.
THE FRIESTEDT HYDRONIZER
PATENT APPLIED FOR

Application of Friestedt Hydronizer.



Atomizing Primer.

## UNIVERSAL CLAMP.

As the name indicates, the Crescent Universal Clamp is an all around, universal tool. It is made of the best malleable iron with steel screw and square cut threads. It can be adjusted from a straight bar to a hoop, and presents a rigid position at all angles. It has many uses; as a valve lifter it may be adjusted to fit practically any valve system; it can be used as a straight or off-set bar for close work around the engine and is of assistance in removing tires.

**Manufactured by Chas. D. Durkee & Co., 2 South St., New York City.**

## CORCORAN CROWN FENDERS.

Our illustration shows the distinctive appearance given to a Ford car by equipping it with the Corcoran Peerless attachment and crown fenders. All parts are furnished, finished with two coats of black enamel baked on.

**Manufactured by The Corcoran Mfg. Co., Cincinnati, O. Write for prices stating year and model of car.**

## THE GANT METER.

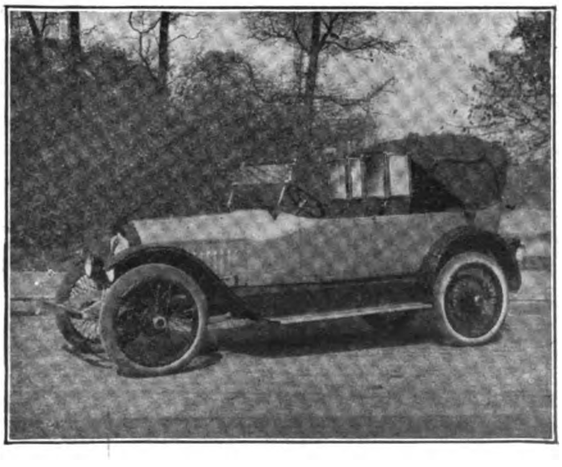
One of the small and often neglected wastes in a supply house is due to the fact that not enough care is exercised in measuring ignition cables and wiring. Inches soon add up to feet and mistakes mean money where secondary cable is concerned. The Gant meter is a device which is said to accurately measure any size of cable, rope or wire drawn through it from one-quarter inch to one inch in diameter. This device is strongly and compactly constructed, finished in green, with large gilt numerals.

**Manufactured by the E. M. Gant Mfg. Co., Inc., Ethridge, Tenn. Price, $5.**

## CURTAIN LIGHT.

The Gordon Curtain Light is equipped with special fasteners for applying it to the curtain on the back of the Ford car should it become broken. It is not necessary to take the rear curtain off when this light is used.

**Made by the J. P. Gordon Co., Columbus, O. Price, 80 cents.**



J. H. Tonneau Shield in Use.

## THE SHAW WRENCH.

In the illustration is shown a handy, one-piece wrench, which is designed to accomplish any task that can be done with a Stilson, monkey, alligator or flat wrench. It will be noted that there is a slit, extending from back of the jaws down the handle. This peculiar construction permits light work to be handled with a light grip and heavy work with a powerful grip. The greater the pull required to loosen a fitting the more powerfully the jaw sets.

**Manufactured by Shaw Propeller Co., Boston, Mass. Prices furnished upon request.**

## COCHRAN SPRING OILER.

Unless you keep your car springs well lubricated their efficiency and usefulness is greatly impaired. However, it is generally a difficult task to put the oil between the leaves without special tools for the work. The Cochran Spring Oiler is designed to facilitate the work. To use the tool, simply take the weight off the spring, insert the oiler, as shown, and the oil will be carried to the centre of the leaves.

**Manufactured by Cochran Pipe Wrench Mfg. Co., 7800 Woodlawn Ave., Chicago, Ill. Write for price.**

## PAIL AND FUNNEL.

The Faultless pail and funnel is designed to fill the demand for an easily carried radiator filler. It is a combination of funnel and pail, made of heavy water proof army duck with a galvanized hoop in the top and non-rustable valve in the bottom. A pull on the string releases the valve in the bottom, allowing the water to flow through the small outlet tube.

When not in use the combination may be folded up and occupies but very small space in the tool kit.

**Manufactured by National Manufacturing Co., Des Moines, Iowa. Price, $1.**

## FERNALD SPRING SUSPENSION.

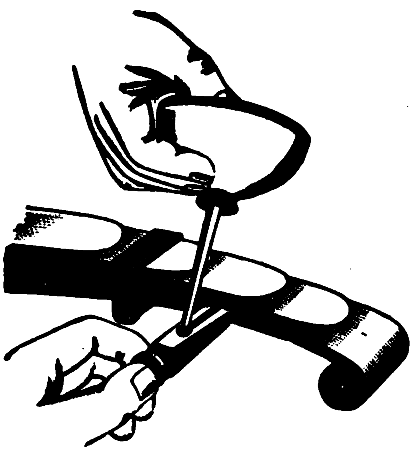
The Fernald shock absorbing spring suspension is intended to be attached to both rear springs of the automobile. It is adjustable from a minimum to a maximum load. The illustration shows this device as applied to a cantilever spring and the action is evident.

**Manufactured by Fernald Shock Absorbing Spring Suspension Co., 170 Summer St., Boston, Mass.**

SHAW
DROP FORGED

Shaw Wrenches.

Kahn Automatic Valve.



Cochran Spring Oiler.

COLLAPSIBLE AUTOMOBILE PAIL & FUNNEL
THE FAULTLESS
MANUFACTURED BY THE NATIONAL MFG CO. DES MOINES - IOWA
PAT. DEC 29, 1914

Pail and Funnel.

## KAHN AUTOMATIC VALVE.

One of the special features of the Armstrong tubes is the standard equipment of Kahn automatic valve attached to every tube. A sectional view of it is illustrated herewith. The outside size and shape are similar to other tube valves. It is the internal construction that differs. Beneath the knurled collar indicated by the arrow at the top of the illustration is a graduated dial marked with five figures, 50, 60, 70, 80 and 90 pounds. The knurled collar is turned until a certain projection on its face fits into the slot above the figure indicating the pressure desired in the tube. An air supply is connected with the valve by the usual method. When the pressure in the tire reaches the desired figure the valve automatically closes and the air from the pump passes through a port to the outside with a whistling noise, thus giving warning that the tire has the desired pressure. The manufacturers claim that it is impossible to put more air into a tire after the pressure at which the valve is set for is reached.

**Manufactured by the Armstrong Rubber Co., Inc., 118 Adams St., Newark, N. J. Prices for tubes upon request.**

## NEW APCO PRODUCTS.

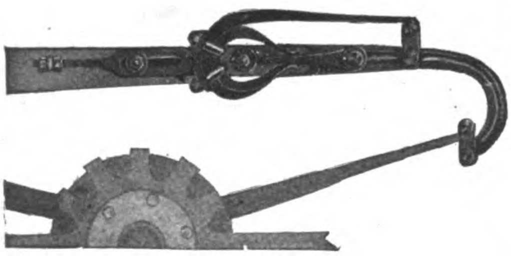
Three new specialties for the Ford car have recently been put on the market and are shown in the illustration.

One of these is an all-metal oil gauge intended to be attached to the crank case. The height of the lubricant in the case is indicated by a white ball, which is attached to a float inside the gauge. The usual draining petcock may be screwed into the gauge. The finish is black enamel.

The Apco rear view mirror differs somewhat from the conventional type in that it is attached to the windshield supporting bracket by a screw instead of a clamp. The mirror glass is spun into the frame, 5⅛ inches in diameter of the reducing type. Finish is in black enamel.

The tow chain illustrated, the makers claim, is capable of supporting a strain in excess of 2900 pounds. The links are treated with a special material to make them rust proof. The chain, which weighs but four pounds, comes in a neat canvas bag.

**Manufactured by the Auto Parts Co., Providence, R. I. Prices: Oil gauge, 50 cents; mirror, $1; tow chain, $2.50.**

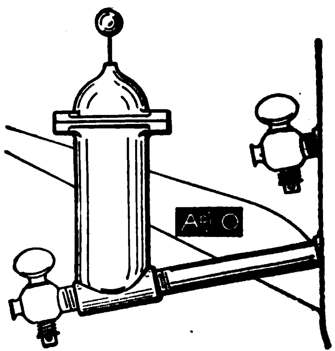


Fernald Spring Suspension.

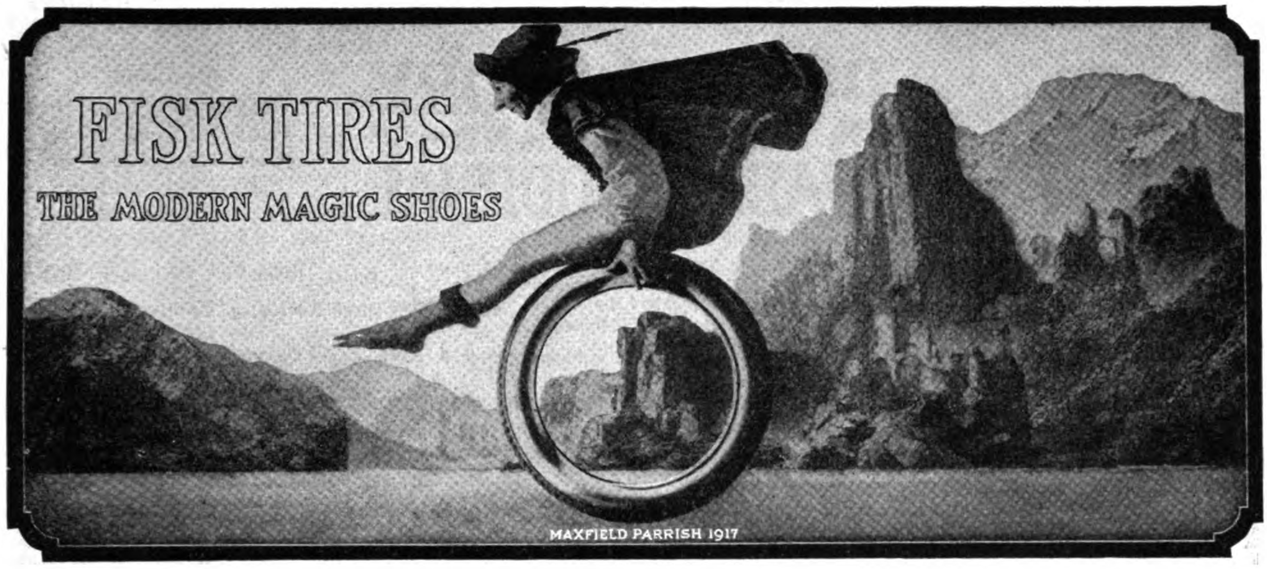
Mirror.

APCO
TOW CHAIN

Tow Chain.



Apco Oil Gauge.



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Published the 15th
of Each Month.

D. O. Black, Jr., Secretary
Times Building, Pawtucket, R. I.

Entered as second class matter, December 30, 1911, at the Postoffice at Pawtucket, R. I., under Act of Congress of March 3, 1879.

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New 1914 and 1915 Maxwell Bodies for Fords, upholstered and finished. Five-passenger, $35; Roadster, $30; Speedster Bodies for Fords, complete with fenders, gas tank, running boards and dust shields for $55.

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## INDEX TO ADVERTISERS

Page
A. B. C. Starter Co............Cover
Adamson Mfg. Co.................55
Advance Auto Accessories Corp... 2
Aerofram Co., The................60
American Motors Parts Co........50
Andaford Truck Co., The..........64
Apperson Bros. Automobile Co.....63
Automobile Accessories Co........50
Auto Parts Co....................50
Auto Salvage Co., Inc.............51
Auto Wrecking Co.................50

Ballmann-Whittier Mfg. Co........58
Bearings Service Co............... 4
Black & Decker Mfg. Co...........57
Bowser & Co., Inc., S. F...........53
Brunner Mfg. Co.................. 3
Butler Mfg. Co....................50

Champion Ignition Co............. 5
Commercial Service Co............53
Cutter, Geo. A....................54

Detroit Battery Co................62
Detroit Magneto Exchange........50
Detroit Piston Ring Co............62
Detroit Truck Co..................62
Dixon Crucible Co., Jos...........60
Dow Wire and Iron Works........55
Dyer Co., G. H.................... 1
D. & D. Company.................55

Faw, Inc., J. H....................57
Fisk Rubber Co...................49
Fitzgerald Mfg. Co................ 8

Garford Motor Truck Co...........56
Gardner Governor Co..............62
Gibson-Hollister Mfg. Co..........56
Greenfield Tap and Die Corp.......64

Harton & Co., Thos. J., Inc........53
Harvey Spring Co..................53
Haywood Tire and Equipment Co.. 7

International Metal Polish Co......61

Jandorf Automobile Co............51
Jenkins Vulcan Spring Co.........62

McHale Sales Co., J. P............56
Mabeys' Electric and Mfg. Co.....61
Martin Mfg. Co....................54
Maxwell Bros......................51
Mossberg Co., Frank...........Cover
Motor Specialties Co..............60
Motorists Accessories Co..........51
Mueller & Co., R. S...............64

National Cash Register Co......... 9
National Exposition for Ford Accessories, Inc.............59

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## INDEX TO ADVERTISERS
(Continued)

Page
New Departure Mfg. Co............63
New Era Spring and Specialty Co..58
Niehoff & Co., Inc., Paul G........61
Norma Co. of America.............63

Pierce Governor Co...............56
Pillsbury Mfg. Co.................52
Poughkeepsie Utilities Corp........54
Prest-O-Lite Co., Inc..............63
Puritan Machine Co...............50

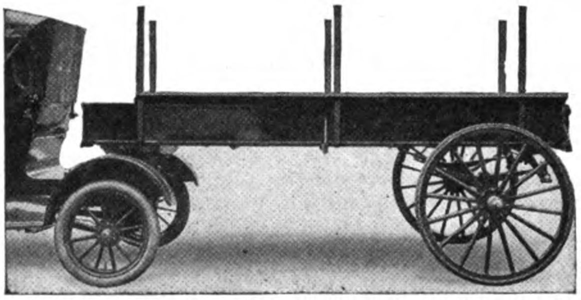
Ross Automobile Co..............64
Ross-Gould List and Letter Co.....56

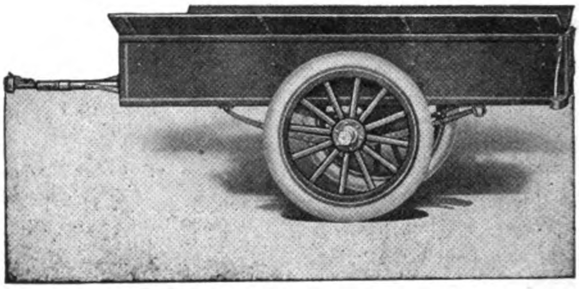
Page
Scaife, Wm. B. & Sons Co.........63
Schrader's Son, Inc., A............58
Service Gear and Machine Co......51
Shotwell Pump and Tank Co......61
Standard Woven Fabric Co.....Cover
Starrett Co., L. S..................10
Stevens & Co......................58
Stockbridge Body Co..............52
Sullivan Motor Car Co.............56

Ton-A-Ford Truck Co..............64

United Engine & Mfg. Co..........62

Vanderpool Co....................62
Walden-Worcester, Inc.........Cover
Weston Electrical Instrument Co..58
Whittier Co.......................57
Williams Foundry and Machine Co..64





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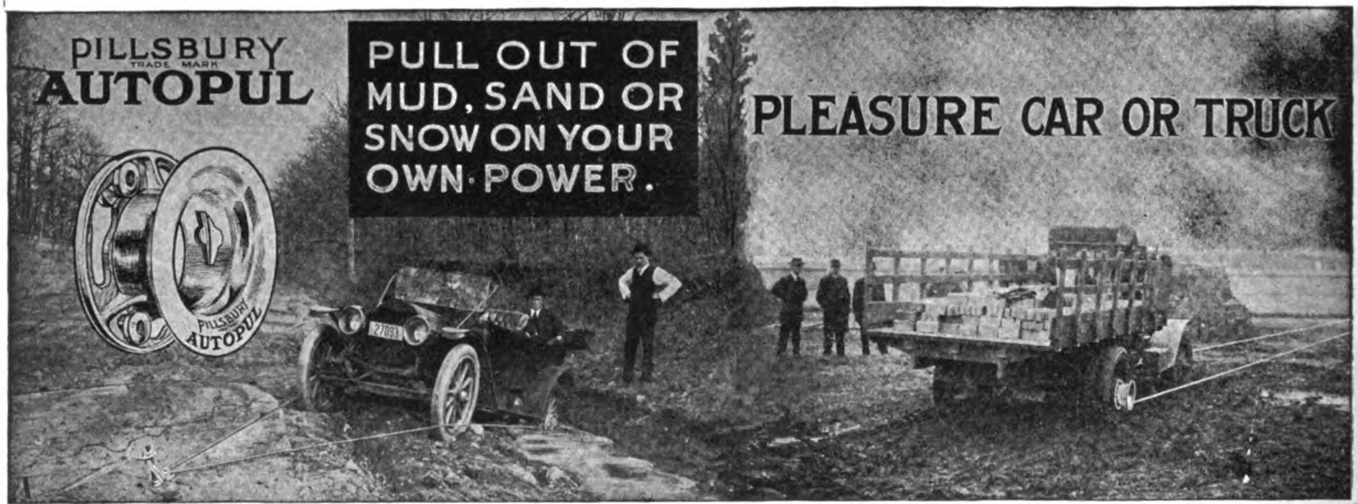

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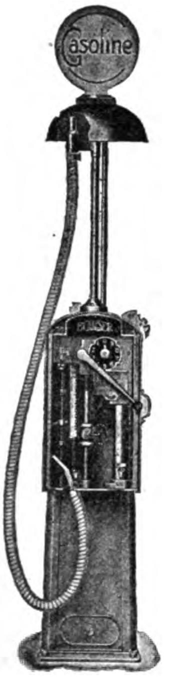

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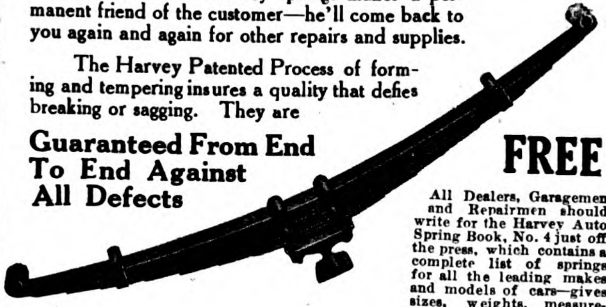

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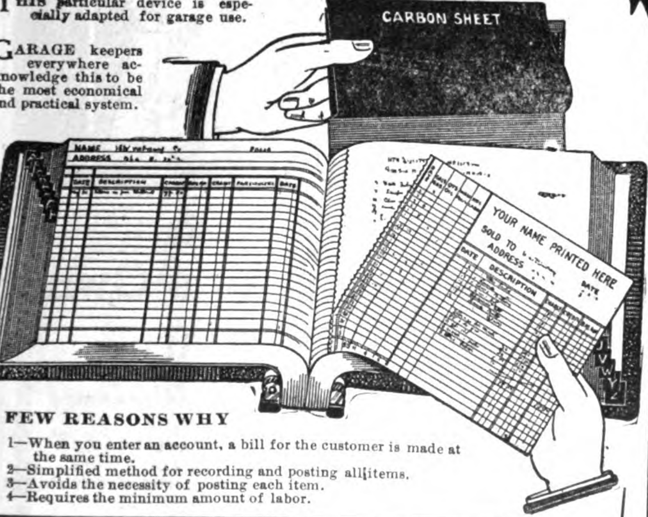

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With a

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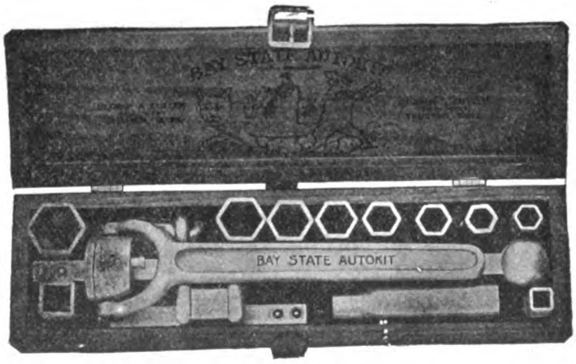

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Unconditional guarantee to buyer with every set.

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LANCASTER OHIO

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## UTILITY VARNISH RENOVATOR

ONE OF THE REASONS

## The Particular Auto Owner

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| *Uses,* | *Utility* |
| *Values,* | *Varnish* |
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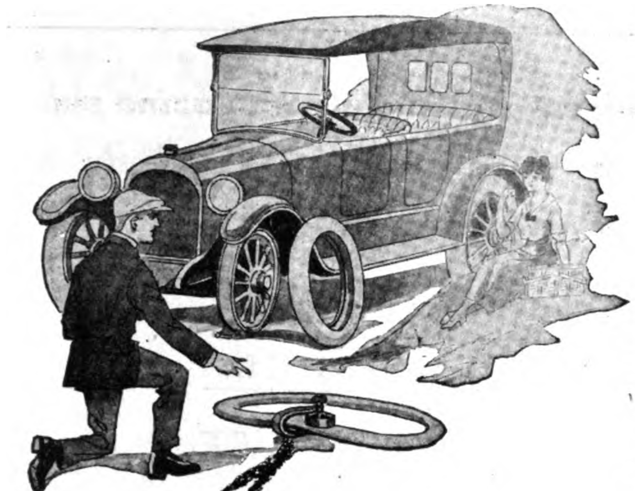
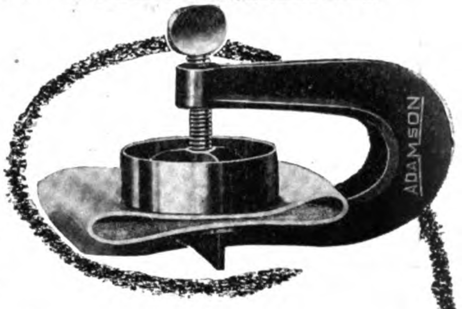


THE NEW
# ADAMSON
MODEL "E"
## 5-MINUTE VULCANIZER



A light and handy outfit for the quick repair of tube punctures. Makes repairing a pleasure.

Uses common gasoline—a most convenient and dependable fuel. Will vulcanize your tubes *anywhere* in five minutes.

The New
ADAMSON

COMPLETE LINE of various sizes "Adamson" Vulcanizing outfits for tube and tire repairing; prices range from $1.50 to $12.00.

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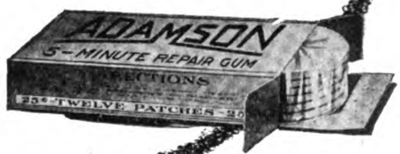
Built on the same proven principles that have made "Adamson" Vulcanizers the most practical and largest selling line in the world.

Complete with box of a dozen "Adamson" 5-Minute Repair Gum Patches for $1.00. Extra box of 12 patches only 25c.

DEALERS: This outfit is a tremendous seller. Order now from your jobber.

**Adamson Mfg. Company**
**East Palestine, O.**



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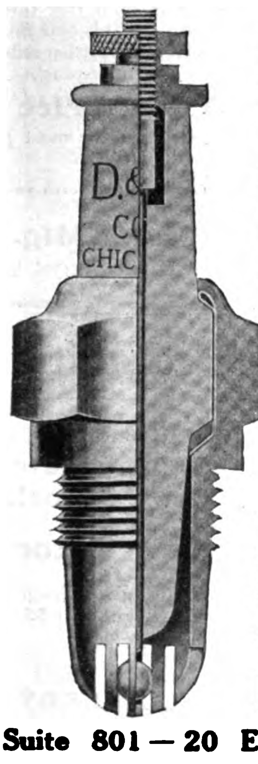
## Fires Every Time and Keeps Firing
## Why?—IT CLEANS ITSELF



The plug with a mechanical device that prevents fouling due to oil and soot. Automatically keeps the sparking terminals clean. A positive cure for all excessive lubrication troubles.

**D. & D. Fouless SELF-CLEANING SPARK PLUG**
*"The Plug with the Ball"*

***Dealers***

The D. & D. Fouless sells to every class of Motorist. It is revolutionizing the industry. Write us to-day for literature and special discounts to dealers.

**D. & D. COMPANY**
**Suite 801 — 20 E. Jackson Blvd., Chicago**

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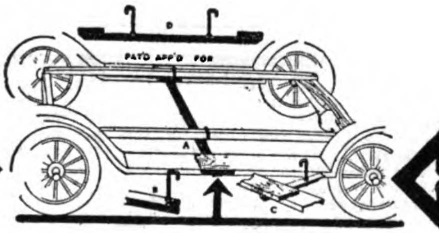


## Every Ford Owner Wants This Brace

Because it's one of the most practical, useful and pleasure giving devices ever produced for Ford cars. The Dow Body Brace not only acts as a shock absorber, but prevents uneven loading and breaking of springs, stops noise and rattle, supports both running boards and fenders and reinforces the whole car.

### DOW BODY BRACE FOR FORD CARS

It is a simple and substantial appliance made of strong angle steel and fits any Ford. Can be attached to the chassis in five minutes. No adjustments necessary—just fasten to the chassis and tighten the bolts.

***Dealers Making Money***

Live dealers are selling them fast. Send us your order today for at least 100 and get your share of the business.

**Price to Ford Owners $3.00**
**Liberal Discount to Dealers**
**Stocked by Leading Jobbers**

**DOW WIRE AND IRON WORKS**
(Inc.)
LOUISVILLE KENTUCKY

DOW LOUISVILLE

THE AUTOMOBILE JOURNAL

*Is the oldest Automobile magazine published in America devoted wholly to owners of pleasure cars.*

A QUALITY MAGAZINE WITH PRESTIGE AND CIRCULATION THAT BRINGS RESULTS TO ADVERTISERS

*TIMES BUILDING - - - - PAWTUCKET, R. I.*

Garford MOTOR TRUCKS

**Trucks of 1, 1½, 2, 3½, 5 and 6 ton capacity. 4½, 7 and 10 ton Tractors. The Garford Road Builder.**

**THE GARFORD MOTOR TRUCK CO., Lima, Ohio.**

Do Business by Mail

It's profitable, with accurate lists of prospects. Our catalogue contains vital information on Mail Advertising. Also prices and quantity on 6,000 national mailing lists, 99% guaranteed. Such as:

War Material Mfrs.
Cheese Box Mfrs.
Shoe Retailers
Auto Owners
Wealthy Men
Ice Mfrs.
Doctors
Axle Grease Mfrs.
Fly Paper Mfrs.
Foundries
Farmers
Fish Hook Mfrs.

Write for this valuable reference book. Also prices and samples of Fac-simile Letters.

*Have us write or revise your Sales Letters.*

Ross-Gould, 1015K Olive Street, St. Louis

**Ross-Gould Mailing Lists St. Louis**

**SELL SULLIVAN TRUCKS**

One of the few staple and practical trucks on the market.

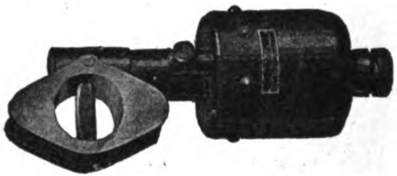
Our selling policy and proposition is the most liberal ever offered to the trade.

**One Model, 3,000 Lbs. Capacity**
**Chassis Price, $1,600**

***Write for complete details***

**SULLIVAN MOTOR CAR CO.**
**Rochester, New York**

PIERCE GOVERNORS



**are a positive guarantee of motor truck efficiency, because they provide automatic speed control. Now standard equipment**

**On 64 Makes of Motor Trucks**

**No better proof of superiority could be offered.**

**PIERCE GOVERNOR CO., Anderson, Ind.**

JUMBO
MOLITE
MADE IN USA

**NO MORE RUST!**

**The clean, non-rusting, non-corroding "NONCORO" FINISH on JUMBO SPARK PLUGS**

means absolute freedom from rust throughout the life of the plug. This new finish is a handsome gray which still further enhances the value of the world's super-plug.

**The 50 Cent Price**

makes Jumbo Spark Plugs the most profitable buy for dealer and driver.

***DEALERS! Get in touch with your jobber now!***

**Gibson-Hollister Mfg. Co.**

Central States Branch
St. Louis, Mo.
BOSTON, MASS.

**Get Our Dealer's Proposition**

on the fastest selling new auto accessory supported by National Consumer's Advertising Campaign for the dealer's benefit.

**The York Carburetor Perfector**

is sold with money back guarantee to increase mileage at least 20% per gallon of gasoline consumed. Retail price **$5.00.**

For Descriptive Literature Address

**J. P. McHale Sales Company**

607 Woodward Ave. Detroit, Mich.

**We Manufacture and Distribute**

**Fawsco Auto Crawlers**
**Combination Improved Oil Cock Wrench and Gasoline Gauge**
**Fawsco Ignition Assemblies**
**Electrical Converters**
**Fawsco Automobile Fuses**
**Red Seal Spark Plugs**
**American Standard Ignition Cables and Lighting Wires**
**Lennon Light Protectors**

***We Represent***

Commercial Fuse Co., Auto Fuses
Culver-Stearns Mfg. Co., Auto Electric Lighting Specialties
Fitzgerald Mfg. Co., Gaskets, Horns, Terminals, Battery Connectors, etc.
The Auto Equipment Co., Eureka Valve-Grinding Compound
Walden-Worcester, Inc., Tools and Wrenches
Ideal Clamp Mfg. Co., Hose Clamps
Independent Lamp and Wire Co., Automobile Bulbs

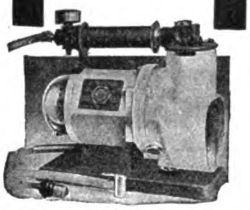
**J. H. FAW, Inc.**

**Main Office: 41 Warren Street, New York City**
**Branch, Atlanta, Ga.**

**Free Air Service**

**With a Profit**

The profit from furnishing free air must come through sales or repairs created through the impression made by your gratis service.



**THE LECTROFLATER**

is ready for use as soon as unpacked. Simply place plug into electric light socket.

Brings the ordinary tire inflation to pressure in about ½ minute. A 34x4 tire can be pumped from dead flat to full pressure in four minutes.

**110 Volt $70.00, f. o. b. Baltimore**

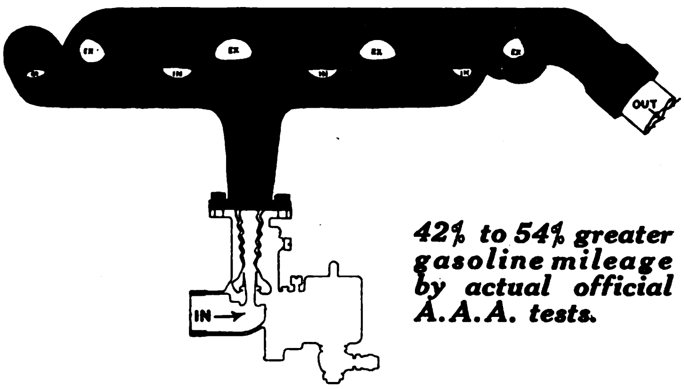
32 and 220 Volt at $3.00 extra. Universal windings.
Can be used on either alternating or direct current.

Other outfits ranging in price from $50.00 to $203.00 including Tank and Curb Station.

*Copy of booklet "Friendly Touch" upon request.*

**The Black & Decker Mfg. Co.**

**304 Water Street, Baltimore, Maryland, U. S. A.**



***42% to 54% greater gasoline mileage by actual official A.A.A. tests.***

**More Miles From Gasoline**
**More Business For You**

**with the**

***Wilmo Manifold***

The best service you can render your customers is the service that saves them money.

And that is just what the Wilmo Manifold does.—

Saves money by increasing gasoline mileage 42% to 54% by actual official A. A. A. tests.—

Saves money by practically eliminating all troubles due to carbon.—

Saves money by giving a smoother running engine on all roads, at all speeds and in all seasons.—

Saves money by keeping the car *in* commission and *out* of the repair shop.—

Saves money because it completely vaporizes gasoline of whatever grade, transforming every vestige into clean, abundant, full-bodied power with no residue to choke the engine and spoil the riding.

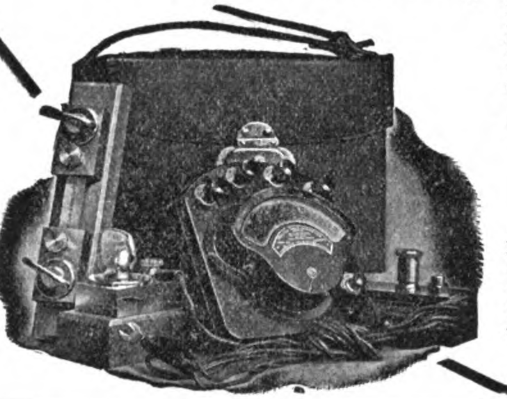
Prices, $7.50 (Ford size) to $15, depending on the make of car. Quickly attached with a monkey-wrench. No holes to bore.

Write for full particulars of this money saver and money maker.

**THE WHITTIER COMPANY**

**Dept. 238, First National Bank Building Chicago, Illinois**

## *Electrical Repairs Bring the Big Profits!*



If you cannot repair electric starting and lighting equipment intelligently, your customer will go elsewhere for this service. He will take the rest of his trade with him. There is more money in electrical repairs than in any other department of the garage business. The demand is enormously increasing.

**Weston**

Model 280

**GARAGE TESTING INSTRUMENT**

Is the best, the most reliable and therefore the cheapest electrical equipment for you. It enables you to promptly and accurately determine the condition of the electrical equipment of any automobile, just where the trouble is and just how to remedy it. Write for our **Special Proposition.**

WESTON ELECTRICAL INSTRUMENT CO., 103 Weston Ave., Newark, N. J.

*23 Branch Offices in the Larger Cities*

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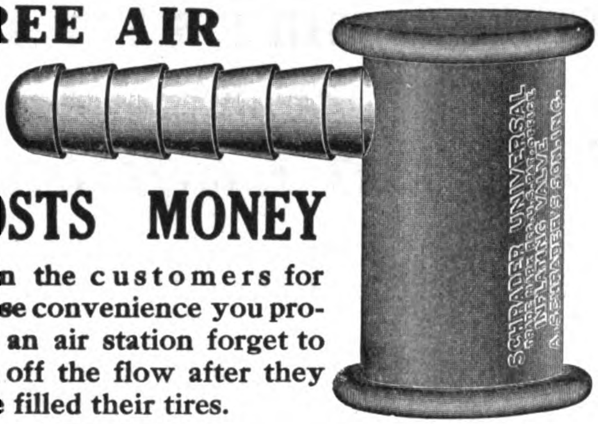
## FREE AIR



## COSTS MONEY

**when** the customers for **whose** convenience you provide an air station forget to **turn** off the flow after they **have** filled their tires.

**Guard against this waste by attaching a**

## Schrader Automatic Inflating Valve

**to your air hose.**

**Thanks to this appliance your bottled air locks itself into the tank the minute it is taken off the tire-valve. You turn on the air by pressing the nozzle of the inflating valve against the tire-valve and you turn it off by removing the device from the tire-valve.**

**Made to fit any diameter of hose from 1-4 in. to 5-8 in.**

**PRICE ONE DOLLAR**
**in U. S. A.**

***Manufactured by***

**A. SCHRADER'S SON, Inc.**
**800 Atlantic Avenue, Brooklyn, N. Y.**

***Schrader products were awarded a Grand Prize and two Gold Medals at the Panama Pacific International Exposition. "There's a reason."***

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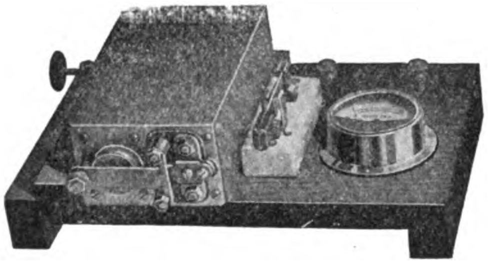

## Mr. Ford Dealer!
## Mr. Ford Repairman!

Remember what a lot of bother that faulty ignition coil in the Ford car caused you yesterday? The engine kept skipping, yet the coil *seemed* all right. It took you just two hours to finally decide that the coil was broken down, and must be replaced. You may have the same work and the same trouble tomorrow or the next day, and when you do, there will be more time wasted and more strong words used.

Buy a B-W Ford ignition coil tester from any dealer or jobber and end all of this bother. With this tester you can slip a coil into place, push in the switch of the tester, and adjust the vibrator *accurately* within five minutes if the coil is all right—if it isn't, it doesn't take you hardly one minute to find it out. You can save the price of the tester in a week, if your time is worth anything, and you will know what you are doing all of the time.

***The list price is $5.10. Trade discounts on request***

**Ballmann-Whittier Mfg. Co.**
2867 Gravois Ave. St. Louis, Mo.

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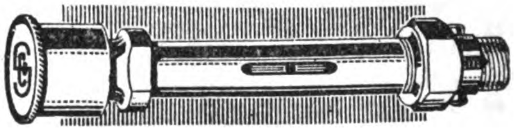
**STEVENS NEW YORK**



## STEVEN'S SHACKLE BOLTS

**HIGH GRADE—BUT NOT EXPENSIVE.**

Particularly well adapted for general repairs and replacements. Furnished complete with grease cup, nut and adjusting washers. List price, each, 40c.
Discount from Your Jobber.

**STEVENS & CO., 375 Broadway, New York.**

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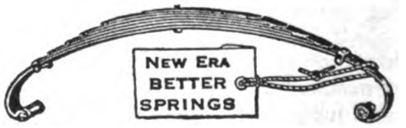
**Stop the Spring Breakage**



It's poor policy to risk repeating the annoyance of a broken or weak spring—and the delay—by saving only a very little in buying or selling a **cheaper** spring instead of a **"New Era BETTER Spring."**

Don't replace a broken spring with one no better. Wise dealers sell only the best.

**New Era BETTER Springs** are the oldest and largest used line for replacement—at same price as from car factories. Made for all cars, **guaranteed** one year against breakage or sagging, graphited between leaves for two years' lubrication.

**New Era Spring & Specialty Co.**
**865-A Woodward Ave., DETROIT, MICH.**

# *National Exposition for FORD Accessories, September 22nd to 29th inc.*

## *At the Coliseum, Chicago*

Every dealer should not only attend this coming Exposition but should see to it that dozens of his customers come as well.

***We do not know how many dealers and owners will attend but we do know that over 200,000 tickets have been requested by dealers for their customers.***

If only a small percentage of those attend who are enthusiastically backing the idea, it will mean the greatest show ever held in the automobile industry.

### NOT A MONEY-MAKING IDEA

This exposition concentrates on a definite and profitable branch of every dealer's business—Accessories.

Here will be hundreds of manufacturers' products, 250 spaces in all, each and every one representing a manufacturer of Ford and other accessories.

Free tickets are being given away thru the dealer everywhere to car owners, and as stated, over 200,000 tickets have been requested by mail.

### FORD OWNERS IN EVERY LOCALITY

Every dealer knows the hundreds of Ford owners in city and on farm—in his locality. This exposition enables you to urge your customers to go to an Exposition built for them, to see all the things under one roof that have been designed and built for their cars.

It enables every dealer to see what is new and best in accessories—it will help you sell your customer accessories.

### WRITE FOR CO-OPERATIVE ADVERTISING--FREE

This show is purely co-operative—all we ask is your hearty co-operation. Write for plans, posters, circulars, free publicity, free tickets, get after your customers early.

Use the coupon below for all information.

### A WORD TO MANUFACTURERS

75% of all space is sold. The jobber and dealer response from Canada to New Orleans, from Coast to Coast, has been beyond the wildest expectations. If you doubt, come and see for yourself. Make your reservations now if you want preferred locations.

## *National Exposition for Ford Accessories, Inc.*

*New Southern Hotel, Michigan at 13th Street, Chicago*

(Dealer Coupon)

**Nat'l Exposition Ford Accessories,**
**New Southern Hotel, Chicago**

Please send me at once full details of how I can co-operate in my town on the coming Exposition.

Name....

Address

## MOTOR TRUCK

**Construction**
**Operation**
**Maintenance**
**Repair**
**Care**

**PRICE ONE DOLLAR**

**A work that is complete, wholly practical and deals with all subjects as the title implies.**

**Truck Care**
**Truck Repair**
**Truck Operation**
**Truck Maintenance**
**Truck Construction**

**Prepared for**
**Owners**
**Operators**
**Repairmen**
**Salesmen**

**$1.00 the copy. In combination with a yearly subscription to Motor Truck (the great national authority on highway transportation, issued monthly) $2.00.**

**This is the only book published dealing with business wagons, it is fully illustrated and represents a wonderful value.**

## THE MOTOR TRUCK

**Times Building Pawtucket, R. I.**

MOSCO

**FLOATING PLUNGER WHEEL PULLER**

FLOATING PLUNGER
PAT'D
MAR. 24 1914
DEC. 15 1914
MOSCO

Makes a "Frozen" or "Stuck" wheel come off easily. Strike the plunger, turn the screw, strike again and the wheel comes off without injury to hub-threads, spokes or axle.

**Made for the following cars:**

Abbott
Apperson
Auburn
Buick
Case
Chalmers
Chandler
Chevrolet
Daniels
Davis
Dort
Empire
Ford
Franklin
Hudson
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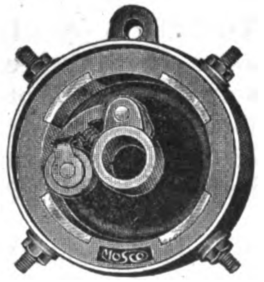
Jeffery
Jordan
Lexington
Liberty
Maxwell
Milburn Electric
Mitchell
Moline Knight
Oakland
Oldsmobile
Overland
Paige
Peerless
Pierce Arrow
Premier
Reo
Saxon
Velie
Vim
Westcott

*Your jobber has them in stock.*
*New models continually being added.*
*List of models and prices on application.*

MOSCO

**Timer For Ford Car**



Extra heavy pressed steel shell, aluminum finish. Insulating ring of gray bone fibre. Terminals insulated all the way through. One-hand, self-closing oiler. Pressed steel arm and compression spring on brush assembly. Brush assembly sold separately. Interesting prices.

***MOTOR SPECIALTIES CO.***
*MANUFACTURERS*
*WALTHAM MASS.*

**Dependability**

is the reason practically all racing drivers lubricate with Dixon's.

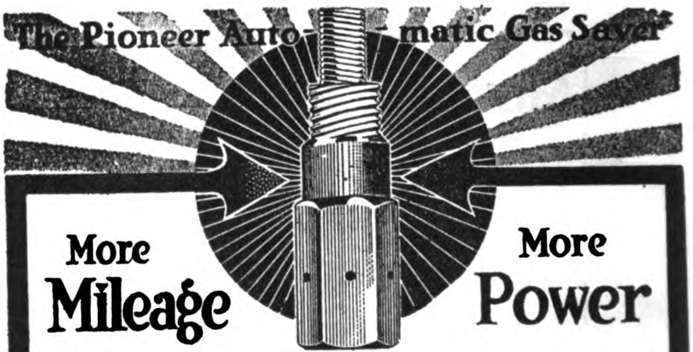
is the secret of Dixon's growing popularity among motorists.

is the dealer's guarantee that he can build business of the better kind by banking on

**DIXON'S GRAPHITE Automobile LUBRICANTS**

***Write to us for Dixon's Dealer's Deal No. 49-G***

Made in Jersey City, N. J., by the
**JOSEPH DIXON CRUCIBLE COMPANY**
JERSEY CITY, N. J.
Established 1827


The Pioneer Auto-matic Gas Saver

More Mileage More Power

**AEROFRAM**
**Gas Saver**

**The Simplest and Most Efficient of All Gas-Saving Devices—Effects a Notable Improvement in Engine Performance—Anybody Can Install It in Ten Minutes—For All Cars.**

***Absolutely Automatic—Nothing to Adjust***

**Dealers:** The Aerofram actually does the work that more expensive gas-savers claim to do. When you offer it to your customer you do so with the certainty that he cannot duplicate its efficiency with any other device at ten times the price. It will positively add two to six miles per gallon—in many cases more. Hundreds of users have testified to this. Write for details. Liberal selling terms.

*Price in Canada $1.50*

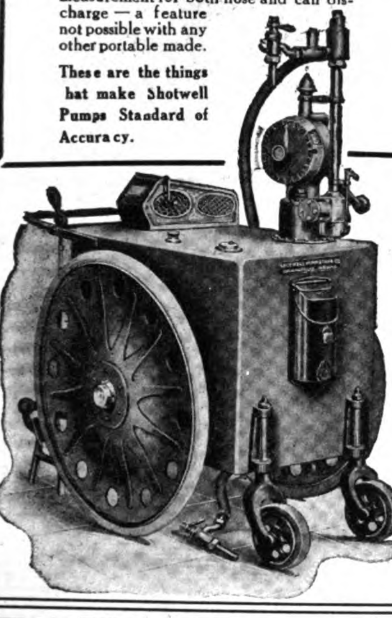
$1 **The Aerofram Co.** $1
107 Massachusetts Avenue. Boston, Mass.

*Turn that Profitless Curb into a Filling Station with a*

**SHOTWELL Anti-Syphoning Portable Filling Station**

Here's the outfit that has a patented anti-syphoning hose draining valve which guarantees against syphoning by the manipulation of the hose and assures accurate measurement for both hose and can discharge — a feature not possible with any other portable made.

These are the things hat make Shotwell Pumps Standard of Accuracy.



**Shotwell** NEVER MORE NEVER LESS STANDARD OF ACCURACY

CURB PUMP

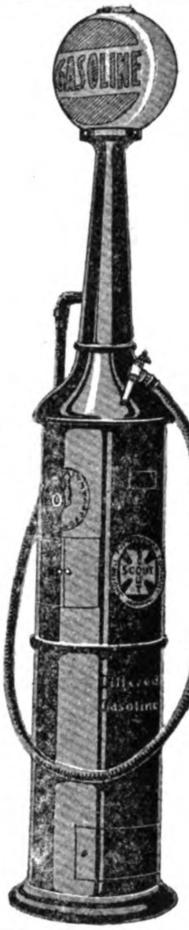
IT will net you $500 a year and bring you cash customers for other lines.

—insures clean, filtered gasoline in accurate measure, delivered 50% faster than by return stroke pumps.

No waste of money, time or oil.
Make steady, satisfied customers of casual buyers.

*Let us tell you all about it.*

**Shotwell Pump and Tank Company**
27 North Alabama Street
INDIANAPOLIS, - INDIANA



ELECTRIC GLUE POT

Mabey's Dry Heat Electric

**Glue Pot**

No flame; no soot or smoke. All danger of fire is eliminated

| Capacity | Price without cover |
|---|---|
| 1 qt. | $ 9.50 |
| 2 qts. | 11.00 |
| 3 qts. | 12.75 |
| 4 qts. | 15.75 |

Century Automobile Cigar Lighter, Complete $1.00 Each, F. O. B. Indianapolis.

*DEALERS—Write For Prices.*

**MABEY'S ELECTRIC & MFG. CO.**
968 Ft. Wayne Avenue INDIANAPOLIS, IND.

PAUL G. NIEHOFF & CO.
METALLURGICAL LABORATORIES

**Have you received your copy?**

It is a *Book of Knowledge* that enables you to become an electrical expert in your automobile work. No more guessing at what you need. It is a complete illustrated catalog of contacts, starter and generator brushes. *Free* to every repair man. This is a line that will build up a splendid business. Ask about our Cash Register of contact parts proposition. Write today.

PAUL G. NIEHOFF & CO., Inc.
Metallurgical Laboratories Clark St., at Kinzie, CHICAGO, ILL.

ONE GALLON
BLUE RIBBON
TRADE MARK
GREASELESS CREAM
AUTOMOBILE BODY GLOSS
INDIANAPOLIS, IND.

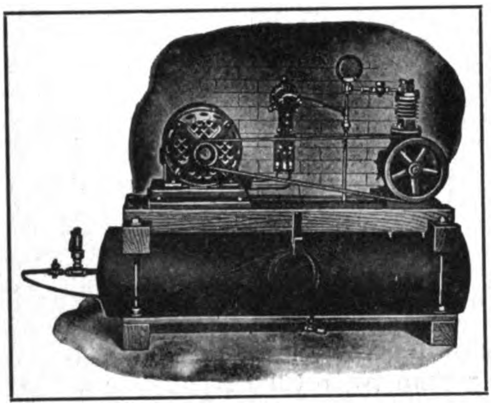
**Keeps the Body of Your Car *Shining* Like a Mirror**

No Grease to Catch Dust—Does Not Coat the Finish—Best Furniture Polish Made—Use With SPRAY if Desired.

**International Metal Polish Co.**

# GARDNER LINE

## *Free Air Unit*



**Free Air Unit** One of the many outfits we manufacture

**WE HAVE A PUMP
FOR EVERY SERVICE**

***Economical — Efficient and Cheap***

**CHICAGO**
1702 Fisher Bldg.

**NEW YORK**
302 Singer Bldg.

**PHILADELPHIA**
604 Arch Street

**LOS ANGELES**
Rix Compressed Air & Drill Co.
409-11 E. Third St.

**SAN FRANCISCO**
Rix Compressed Air & Drill Co
505 Howard St.

# DETROIT BATTERIES

For every make and model of motor car carrying an electric starting system. Replacements on cars no longer manufactured can be had promptly.

**Detroit Battery Co.**
Detroit, U. S. A.

3
CONSUMERS OIL CO.

# Sell ALL Your Prospects

Sell the Tonford. Meets demands for internal Gear and Chain drives. Some prospects want one—some another.

## TONFORD

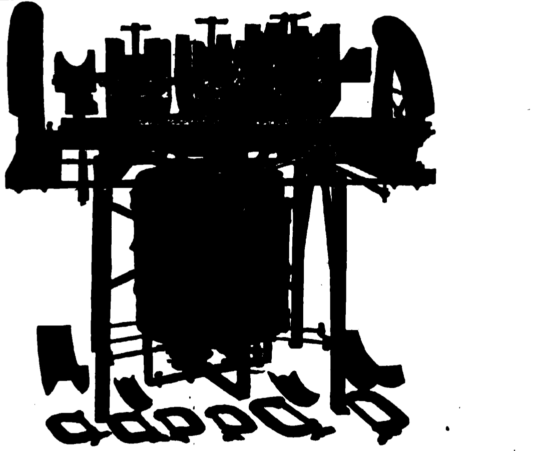
**Chain Drive**
**$350**

**Internal Gear Drive**
**$390**

The Tonford has been in use for more than a year. Thousands of owners attest its strength—serviceability—reliability. The Tonford attracts ***quality*** dealers because of its reputation for quality, unequaled at anywhere near the price.

**Make us prove it. Write today—*now*—for Tonford information.**

MANUFACTURED BY THE
**DETROIT TRUCK CO.** - - - - **Detroit, Mich.**



*Vanderpool 3 Cavity Vulcanizer*

**VANDERPOOL CO.,** **Springfield, Ohio**

Jointless
THE
MASTER
RING
OF
PISTON
PACKING

# Jointless Piston Rings

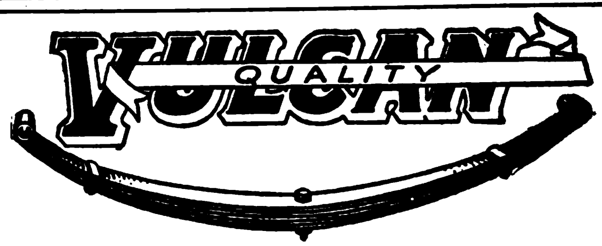
There are no substitutes for Jointless Piston Rings. The Jointless affords every quality found in other rings and assures to all users a permanent, gas tight ring, more power, less carbon, increased mileage, less gasoline and lubricating oil.

The Jointless eliminates all usual piston ring troubles. It is finely constructed and its efficiency makes the Jointless a money making and saving proposition for any owner of a pleasure car or truck.

## List Price $1.00

**Sold by all Jobbers and Dealers.**

**DETROIT PISTON RING CO.**
53 Richmond Ave. Detroit, Mich.



## *90,000 SPRINGS IN STOCK*

***Replacement Service Unexcelled***

**Jenkins Vulcan Spring Co.**

Saint Louis, Mo. - 1402 Chestnut St.
Minneapolis, Minn. - 1024 Hennepin Ave
Reading, Pa. - - - 538 Franklin St.
Forth Worth, Tex. - 708 Commerce St.
Sumter, S. C. - - 29 Caldwell St.

# The MANLEY GARAGE AND SHOP EQUIPMENT

Every garageman and repairman should get our catalog. You'll find in it just the time and labor savers you need, and their prices will astonish you by their moderateness.

*Send for your copy of this catalog today*

**THE UNITED ENGINE & MFG. CO.**
Hanover, Pa.

# A "BIG" CAR THAT SAVES TIRES AND GAS

**This is the success of the Apperson—130-inch wheelbase—48 to 56 horsepower. Sixes and Eights, $1790-$2250.**

**APPERSON BROTHERS AUTO. CO., KOKOMO, IND.**

# APPERSON

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## Add to Garage Profits by Oxy-Acetylene Welding

**Savings made please your patrons and pay good substantial profits**

## PREST-O-LITE

**Dissolved Acetylene**
**(Ready-made carbide gas)**

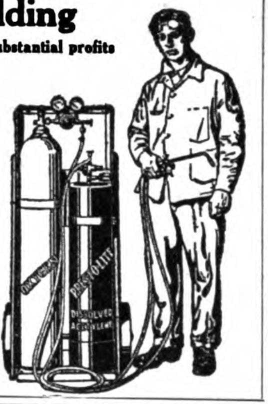
adds to the efficiency and usefulness of any good welding equipment. We furnish thoroughly high grade welding apparatus for $75.00. (Canada $100.00). The average user will also need gas cylinders at an additional cost, and about $10.00 worth of welding supplies. Truck and special equipment for cutting operations at extra cost.

***Send for details of Prest-O-Lite Service for Oxy-Acetylene Welding.***

**The Prest-O-Lite Co., Inc.**

*World's Largest Makers of Dissolved Acetylene*

Main Office & Factory, 309 Speedway, Indianapolis
Can. Gen. Office, Dept. 0.-9, Toronto, Ont.



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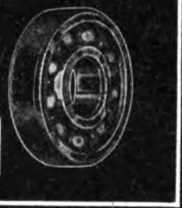
## NEW DEPARTURE BALL BEARINGS

American Made
FOR
American Trade
QUALITY
FIRST

THE NEW DEPARTURE MANUFACTURING CO.
CONRAD PATENTS LICENSEES
BRISTOL, CONN., U. S. A.



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WM. B. SCAIFE & SONS CO.
PITTSBURGH, PA.
BRAZED
AIR TANK

## SCAIFE COPPER-BRAZED AIR TANKS

are positively guaranteed to hold air indefinitely without loss of pressure.

**CAUTION**

Do not confuse Scaife Copper-Brazed Tanks with the cheap Welded or Soft-Soldered Tanks made by others.

**We Also Manufacture**
**SCAIFE GASOLINE STORAGE OUTFITS**

***Send for Catalogues.***

**WM. B. SCAIFE & SONS CO.,**
First National Bank Bldg. PITTSBURGH, PA.

---

# "NORMA"

# BALL BEARINGS

**(Patented)**

A trouble-proof car may be an ideal impossible to be realized. It can be approached, however, if every care is exercised to make every detail that enters into the construction and equipment of that car as nearly trouble-proof as possible. This emphasizes the important part that so-called minor details play in the performance of any car. Manufacturers of high-grade magnetos and lighting generators have found by experience that "NORMA" Bearings give them dependable bearing service—and they have standardized on "NORMA" Bearings. Makers of cars of the better class have learned by experience that the electrical accessories that give them the most dependable service have "NORMA" Bearings—and they have standardized on these magnetos and lighting generators.

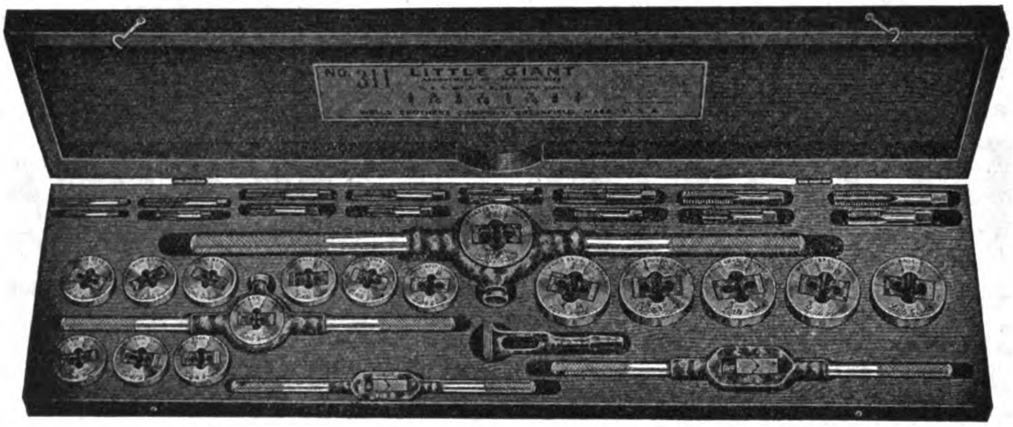
**Be *Sure*—See That Your**
**Electrical Accessories**
**Are "NORMA" Equipped**

**THE NORMA COMPANY OF AMERICA**
**1790 BROADWAY NEW YORK**

**Ball, Roller, Thrust and Combination Bearings.**

# Little Giant Combination Screw Plates

**Both United States and S. A. E. Standards**



These assortments are particularly valuable in the automobile repair shop where a considerable amount of threading is done. Each die is contained in its own collet and is adjusted to size. There is also a Bit Brace Die Holder for cleaning up battered threads in hard-to-get-at-places.

Every need of the manufacturer, the garage and repair man, or the car owner who makes his own repairs, for tap and die assortments can be supplied from our big line.

Send to-day for the circulars "Tools for the Automobile" "First aid in the up-keep of the Automobile."

**Greenfield Tap and Die Corporation,** Greenfield, Mass.

New York Chicago Philadelphia Galt, Ontario

---

## *DO TIRE REPAIRING-*

as a separate business department of your Garage. Business easy to get, grows steadily, and pays well; only small capital required and opportunity everywhere. For best work and surest profits use

# Akron-Williams

**TIRE REPAIR EQUIPMENT**

*Used and recommended by 60 Leading Tire Companies*

***Send for booklet No. 12 and catalogue on complete outfits for every size garage.***

**THE WILLIAMS FOUNDRY & MACHINE CO.**
Ash Street, Akron, Ohio

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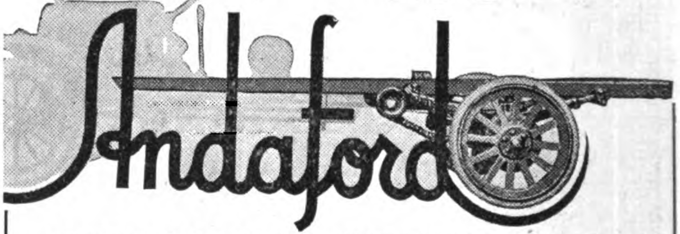
**$295.00**



**Lowest in Price, Biggest in Value**

Remove Ford Pleasure Car Body and Rear Wheels. Attach Andaford Unit Makes dependable 2500 pound truck. Best seller on market.

WRITE FOR DEALERS' PROPOSITION

**The Andaford Truck Co.**
Jefferson and cDougall Aves. Detroit, Mich.

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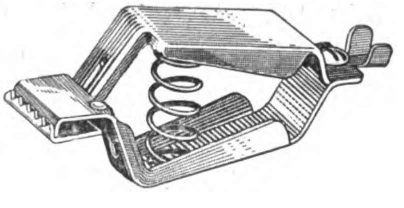
**Hook Up Your Batteries With Universal Battery Charging Clips**



They enable you to charge lighting and starting batteries without disconnecting them from the car.

Made of steel—lead plated—may be used over and over again.

No. 21-A—1½" spread of jaws.

Sample mailed postpaid for 15c in stamps.

Single Lots, Each 20c Lots of 10, Each 15c Lots of 100, Each 12 1-2c

**R. S. MUELLER & CO., 431 High Ave., S. E., Cleveland, Ohio.**

---

**THE MINIMUM IN DELIVERY COST**

# TON-A-FORD

(Trade Mark—Foreign Rights Reserved)

## Extension Chassis, $345

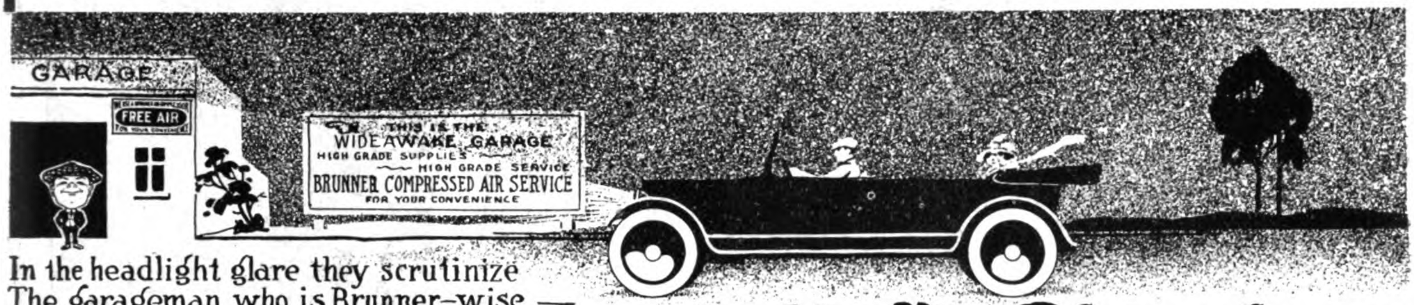
F. O. B. RACINE

Combined with a Ford Chassis (new or old) makes a Powerful Ton-Truck, with Ton-and-a-Half capacity.

**Dealers:** Write for specifications and our agency proposition

**TON-A-FORD TRUCK CO.** 15th St., RACINE, WIS.

# BRUNNER



In the headlight glare they scrutinize
The garageman who is Brunner-wise —
On the Brunner sign they rest their eyes
And stop for air and – some supplies.

YES, BRUNNER SERVICE SATISFIES

**SERVICE that satisfies is the one big dominant factor in the administration of the garage business of today, and the success of the modern garage is dependent entirely upon the class of service it renders.**

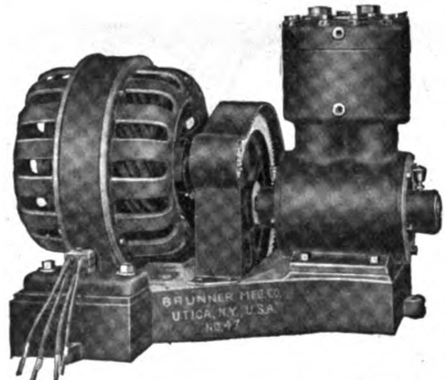
**Mr. Garageman, when they flash their headlights on you at night, are you prepared to render such service? Does your service satisfy? If not, then you should seriously consider the matter of installing Brunner Service, because Brunner Service always satisfies.**

## INCREASE YOUR INCOME BY IMPROVING YOUR SERVICE

## INSTALL A BRUNNER AIR COMPRESSOR

***Seven Standard Sizes and Any Number of Combinations to Choose From.***
***No Restriction of the Lubrication to Invite Disaster.***

No matter how good your compressed air service may be, Mr. Garageman, Brunner Service would be an improvement, because it would strengthen your standing with the trade you have and—it would bring to your door the trade of the Brunnerwise Motorist and increase your sales of gasoline and supplies, because the Brunnerwise Motorist is a liberal spender and appreciates the service that satisfies.



The Brunner is the pioneer of the present day air compressors—it was not put on the market ten years before the garage was thought of—it was designed and built especially for the garageman's use and it has been consistently demonstrating its sterling qualities to the garageman in the garage ever since we have had garages.

The sale of the Brunner Air Compressor to the garageman is far greater than any other air compressor made—the reason is obvious.

## YOU CAN BANK ON A BRUNNER AIR COMPRESSOR

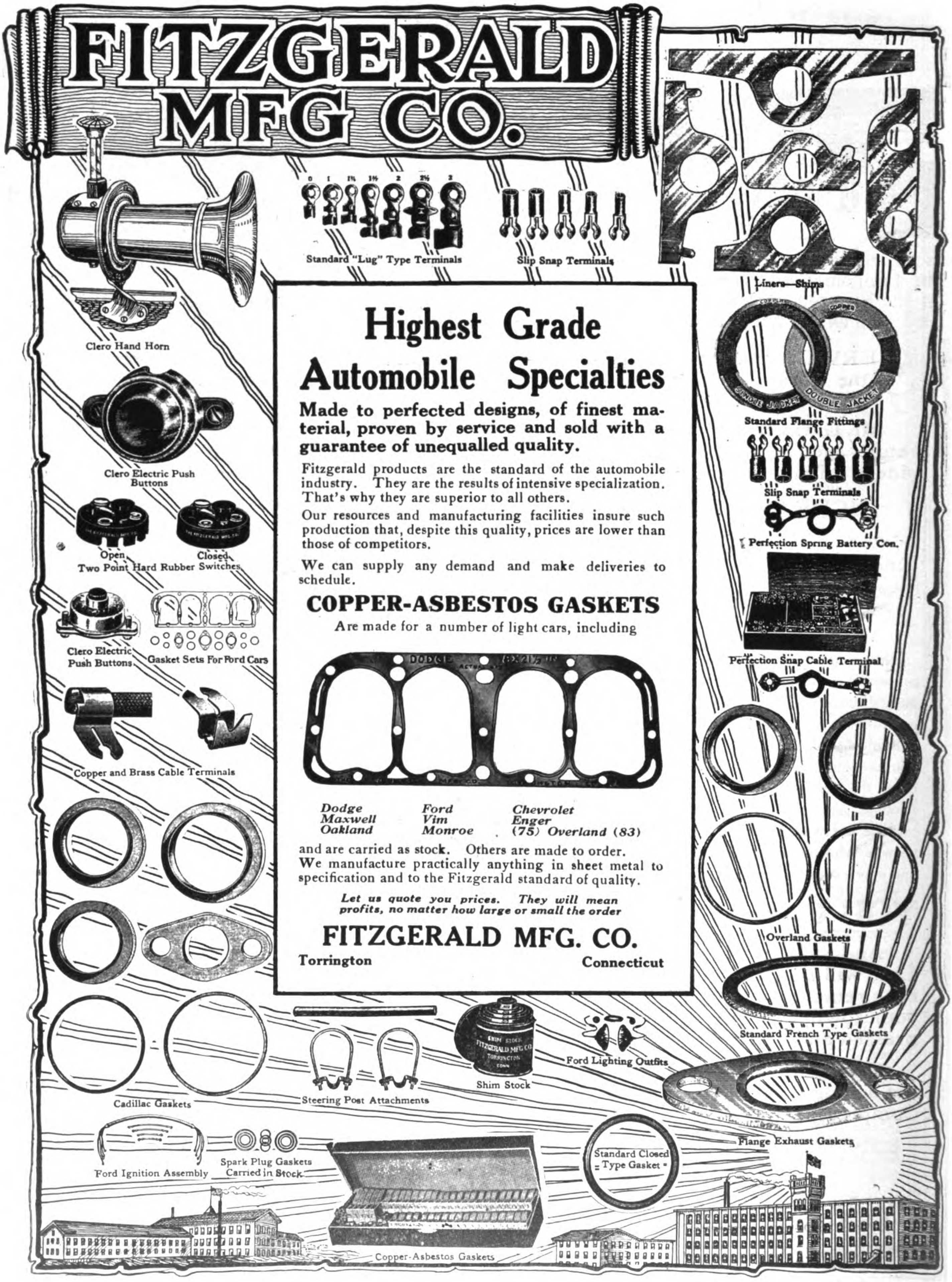
**And any one of the high-class reputable jobbing houses who distribute the Brunner Line will be glad to recommend and guarantee a Brunner outfit to meet your special requirements. We will be glad to send you the name of the Brunner Jobber covering your town, and our engineers will be very glad to assist you in making your compressed air service—a service that satisfies.**

**Our No. 14 Catalog and Garageman's Handbook on Compressed Air are yours for the asking. Write for these books today and get the facts regarding the Garage Air Compressor situation.**

## BRUNNER MANUFACTURING COMPANY

**Main Office and Plant:**
UTICA,
N. Y

**Cincinnati Branch:**
CINCINNATI,
OHIO.


FITZGERALD MFG CO.
0 1 1¼ 1½ 2 2½ 3
Standard "Lug" Type Terminals
Slip Snap Terminals
Liners—Shims
Clero Hand Horn
COPPER
SINGLE JACKET
DOUBLE JACKET
Standard Flange Fittings
Slip Snap Terminals
Perfection Spring Battery Con.
Clero Electric Push Buttons
Open
Closed
Two Point Hard Rubber Switches
Perfection Snap Cable Terminal
Clero Electric Push Buttons
Gasket Sets For Ford Cars
Copper and Brass Cable Terminals
DODGE
Overland Gaskets
Standard French Type Gaskets
SHIM STOCK FITZGERALD MFG. CO. TORRINGTON CONN.
Ford Lighting Outfits
Shim Stock
Cadillac Gaskets
Steering Post Attachments
Flange Exhaust Gaskets
Ford Ignition Assembly
Spark Plug Gaskets Carried in Stock
Standard Closed Type Gasket
Copper-Asbestos Gaskets

# Highest Grade Automobile Specialties

**Made to perfected designs, of finest material, proven by service and sold with a guarantee of unequalled quality.**

Fitzgerald products are the standard of the automobile industry. They are the results of intensive specialization. That's why they are superior to all others.

Our resources and manufacturing facilities insure such production that, despite this quality, prices are lower than those of competitors.

We can supply any demand and make deliveries to schedule.

## COPPER-ASBESTOS GASKETS

Are made for a number of light cars, including

| | | |
|---|---|---|
| *Dodge* | *Ford* | *Chevrolet* |
| *Maxwell* | *Vim* | *Enger* |
| *Oakland* | *Monroe* | *(75) Overland (83)* |

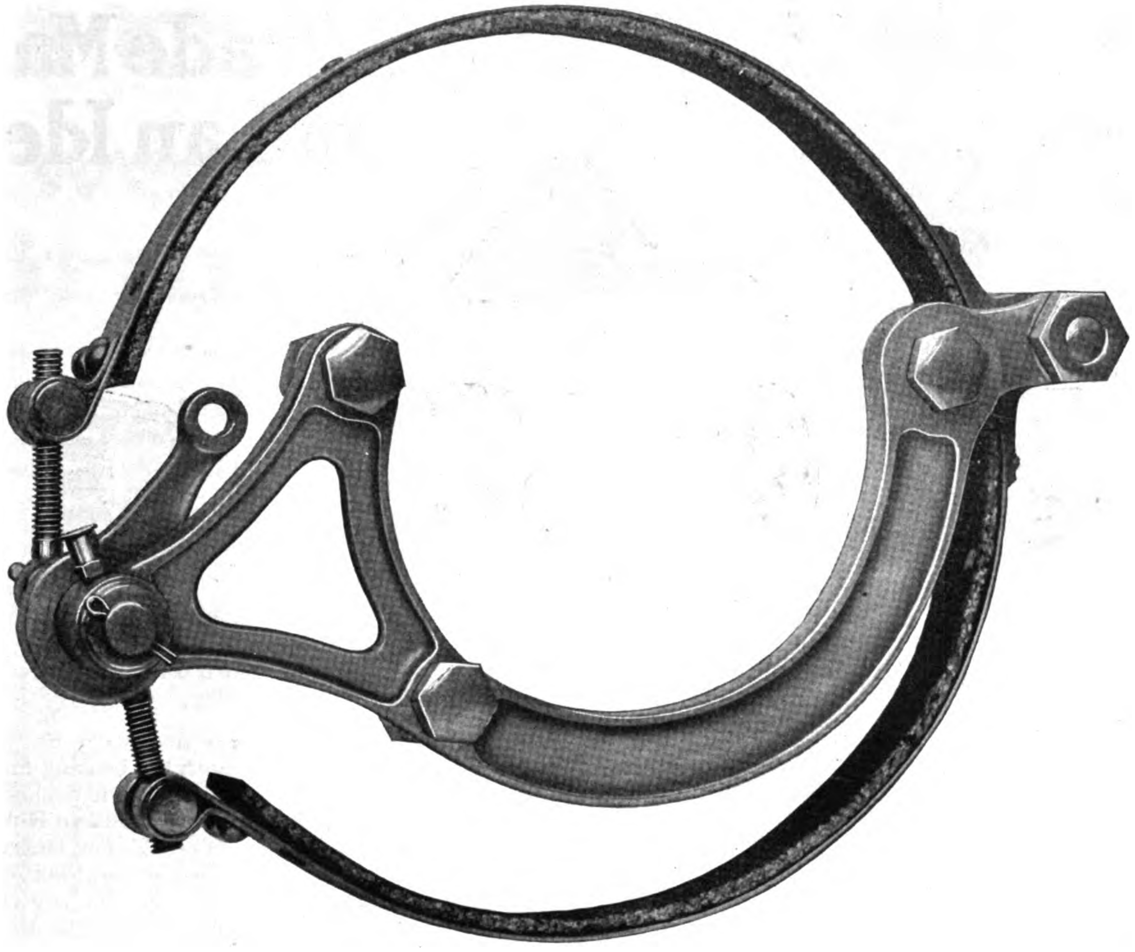
and are carried as stock. Others are made to order. We manufacture practically anything in sheet metal to specification and to the Fitzgerald standard of quality.

***Let us quote you prices. They will mean profits, no matter how large or small the order***

**FITZGERALD MFG. CO.**

**Torrington** **Connecticut**

# THE BRAKE THAT IS **THERE** WHEN NEEDED



SAFETY
HOLDFORD BRAKES
FIRST

## The Perfect, Practical, Positive Brake For Ford Cars

**NOT ONLY MAKES YOU FEEL SAFE, BUT ASSURES YOUR SAFETY**

**HOLDFORD BRAKES** are high-grade external contracting brakes for Ford cars, which can be easily and quickly installed to act from the hand lever as emergency brakes, or from the foot pedal as service brakes. Designed in accordance with the best engineering practice; the band and brace are of steel, the toggle crank and bracket are drop forgings and the lining J-M non-burn. Do not drag when released, no readjustment for wear is necessary and oiling is easy.

The brake usually supplied with this car cannot be depended upon in that "tight corner" or "on the hill." The hand brake wears out quickly and allows the car to creep when being cranked. The constant use of the foot brake quickly wears out the transmission. As the foot brake operates from the drive shaft any accident to the axle or the stripping of gears might mean a serious accident.

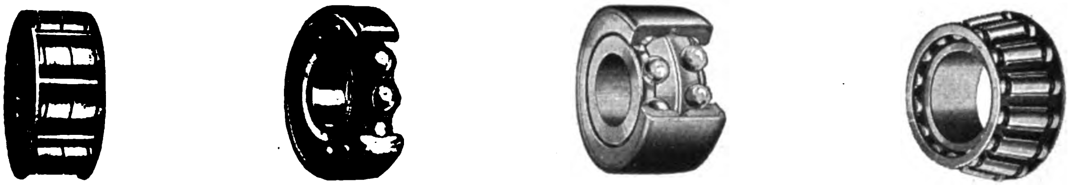
**HOLDFORD BRAKES** save wear and tear and will be attached by the wise owner on his pleasure car, delivery car or truck. They will positively stop a Ford with locked wheels on *any grade, at any speed, with any load.* Not necessary to remove old brakes. (When ordering state whether hand or foot brakes are wanted).

**THE G. H. DYER COMPANY - - - Cambridge, Mass.**

# A Year Ago—

BEARINGS SERVICE COMPANY

# A Trade Mark and an Idea



HYATT NEW DEPARTURE TIMKEN

A year ago the Bearing Service Company was represented by a trademark. Today it is represented by twenty-two branches.

The idea itself was one of "service"—a specialized service to automobile dealers, garagemen and motorists.

At each of our branches are maintained complete stocks of the leading types of anti-friction bearings—Timken, Hyatt and New Departure—bearings of every size and description.

In addition to these stocks, there is maintained at each of these branches a detailed system of records—supplied by the bearing manufacturers—which enable us to tell the exact size of bearing needed for any location in any make of motor vehicle.

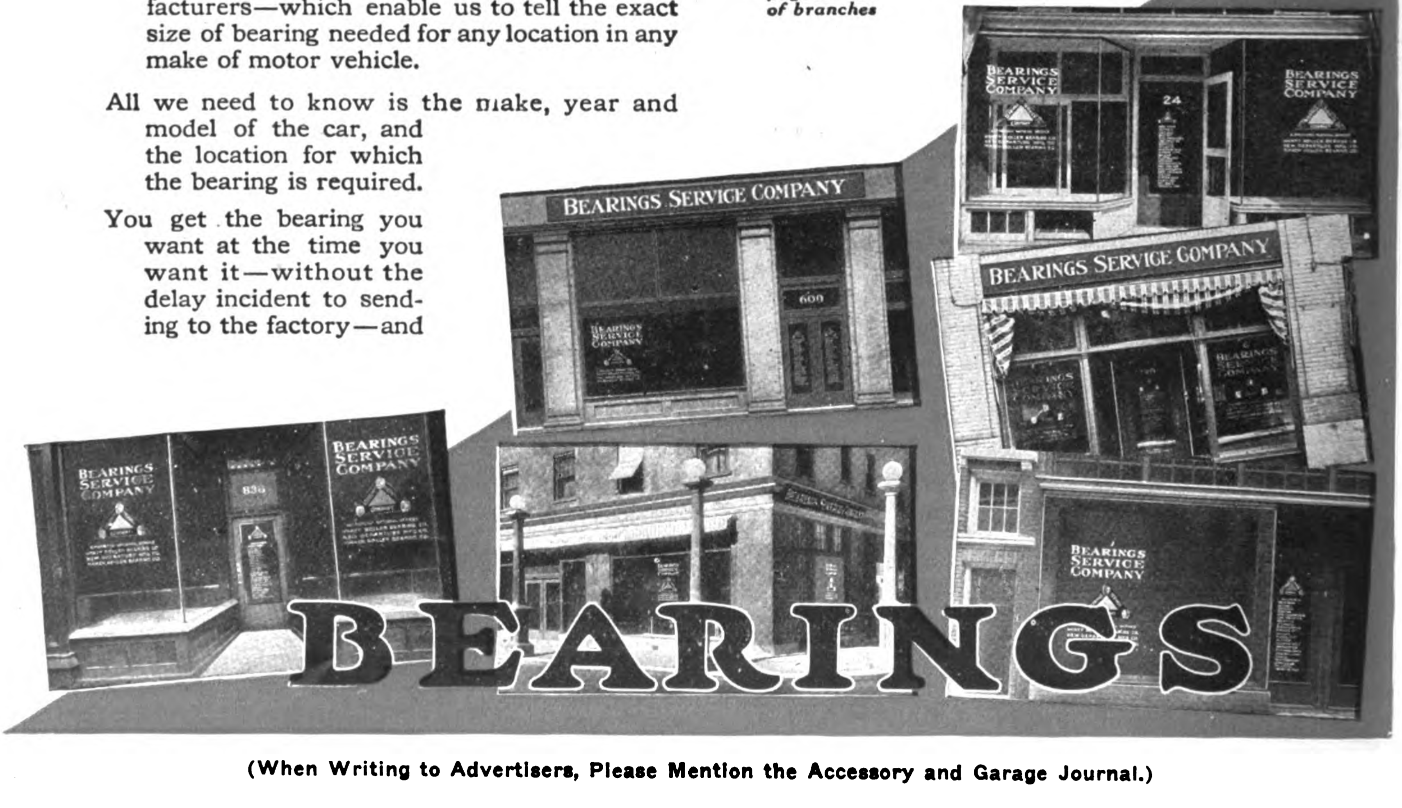
All we need to know is the make, year and model of the car, and the location for which the bearing is required.

You get the bearing you want at the time you want it—without the delay incident to sending to the factory—and with the assurance that it will fit the location for which it is required.

And remember—when you deal with us, you are practically dealing with the bearing manufacturers themselves. We are the exclusive national representative of the Timken Roller Bearing Company, the Hyatt Roller Bearing Company and the New Departure Manufacturing Company—chosen to render you service in everything that pertains to these leading types of anti-friction bearings.

**General Offices:** DETROIT, MICHIGAN

*See opposite page for list of branches*



# To-day-
# Twenty-Two Branches

- New York
- Detroit
- Chicago
- Boston
- San Francisco
- Los Angeles
- Seattle
- Atlanta
- Minneapolis
- Kansas City
- Dallas
- Cleveland
- Denver
- Indianapolis
- Rochester
- Philadelphia
- St. Louis
- New Orleans
- Omaha
- Pittsburg
- Portland, Ore.
- Toronto, Can.

BEARINGS SERVICE COMPANY
Bearings Service Company
BEARINGS SERVICE COMPANY
Bearings Service Company
BEARINGS SERVICE COMPANY
BEARINGS SERVICE COMPANY.
Bearings Service Company
ELECTRICIANS
BEARINGS SERVICE COMPANY
BEARINGS SERVICE COMPANY
BEARINGS SERVICE COMPANY

**SERVICE CO.**

# 1917 SALES

# FOREIGN BUSINESS $90,958,243.00

From National Automobile Chamber of Commerce,
7 East 42nd Street, New York, August 27, 1917

## *Embargoes Affect Motor Car Exports*

**Thirty-five Per Cent. Decrease in Shipments to Great Britain, France and Russia During Last Fiscal Year—Big Increases to All Other Countries—Shipments Total 80,811 Cars, Valued at $90,958,243—Thirty-three Hundred More Vehicles Exported, But Aggregate Value is $6,507,000 Less—Fewer Trucks and More Passenger Cars.**

Figures just issued by the Department of Commerce show that during the 12 months ended June 30, 1917, the United States exported 80,811 automobiles and motor trucks, valued at $90,958,243, as compared with 77,499 cars, valued at $97,465,811 during the preceding fiscal year.

Analyzing the official figures, the National Automobile Chamber of Commerce finds that the increase in number of cars exported is due to the larger shipments to most countries outside of Europe, which more than offset the decreases in exports to Great Britain, France and Russia, due to import prohibitions and lack of shipping facilities.

The fact that the aggregate value of exports during the last fiscal year was less by $6,507,000 than in the preceding year, while the actual number of vehicles exported was greater by 3312, is due to decreased shipments of trucks for war purposes, the average value of which is much higher than the average value of passenger cars exported to countries outside of Europe.

Exports of commercial vehicles and passenger cars during the two years were as follows:

| | 1916 | | 1917 | |
|---|---|---|---|---|
| | No. | Value | No. | Value |
| Commercial.... | 21,265 | $56,805,548 | 15,977 | $42,337,315 |
| Passenger...... | 56,234 | 40,660,263 | 64,834 | 48,620,928 |

Thus, while the number of trucks exported fell off 5288 in the year and their aggregate value was $14,468,233 less, the shipments of passenger cars increased by 8600 and their value by $7,960,665.

Great Britain and France were still our largest markets, despite their heavy falling off in purchases. The former bought $18,508,442 worth last year, mostly trucks, as against $26,147,232 worth in the previous fiscal year. France's imports were nearly all trucks and amounted to $14,691,460, as compared with $19,137,904 in the 12 months ended June 30, 1916.

Owing to shipping difficulties and internal political troubles, Russia's imports fell from a value of $15,686,874 in 1916 to $6,371,982 in the last fiscal year.

Exports to the rest of Europe combined increased remarkably, when it is remembered that no shipments went to the central empires. The increase amounted to more than $1,000,000 in the year, accounted for largely by exports to the Scandinavian countries, Holland and Spain. Europe as a whole took slightly less than one-third by valuation of the total American exports.

Aside from the European countries, Canada is America's best customer for motor cars, having increased her purchases by nearly $4,200,000—from $7,280,151 in 1916 to $12,088,787 in 1917.

Next comes Asia and Oceania, with imports of 9716 cars, valued at $10,093,720 last year—an increase of $1,450,927. Australia follows, with 5000, valued at $4,213,874. The British East Indies increased their purchases from $2,307,739 to $3,617,351.

In the Americas, after Canada, the West Indies were our best market for automobiles, to the extent of $4,072,647—an increase of $1,248,735 over the year before.

The most remarkable increases, however, are shown by Mexico and the South American republics. Mexico's commercial recovery is reflected by an increase from $409,700 to $1,833,975 in the year. Argentina's imports reached nearly $2,500,000. Brazil's trebled. Chile's prosperity from her nitrate mines resulted in an increase from $576,777 to $1,982,538. The rest of South America took automobiles to the value of $1,804,827, as against only $698,911 the year before.

In addition to automobiles the United States exported in the last fiscal year 23,435 automobile engines, valued at $2,844,406; tires worth $12,330,201 and parts worth $27,284,932.

This makes a grand total of $133,417,782 of foreign automobile business done by the country last year, which means a lot of money in the pockets of American workingmen.

***If you are a member of the Foreign Trade Bureau conducted by the Automobile Journal Publishing Company you can reach 8,000 foreign buyers of pleasure cars, trucks, fittings, supplies, accessories, tools and equipment in more than 81 foreign countries.***

ALL FACTS AT REQUEST

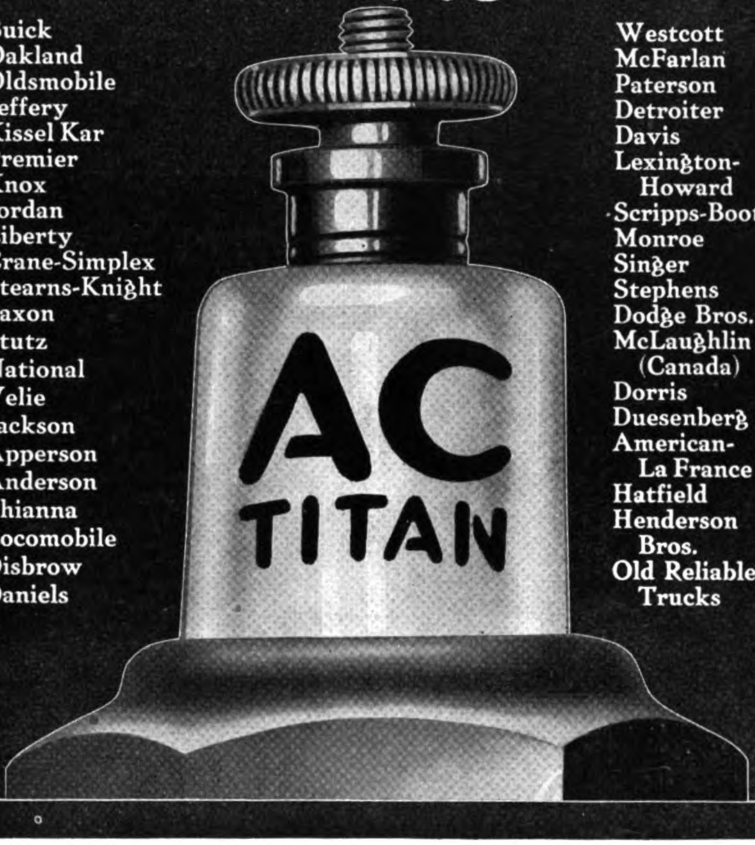
**Automobile Journal Publishing Company**

**TIMES BUILDING** **PAWTUCKET, R. I.**

# The Most Reliable—and These Manufacturers Know It—and Equip Their Cars With AC Spark Plugs

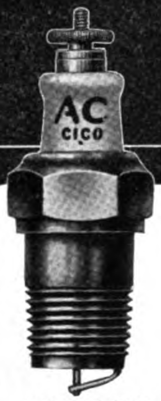
Cadillac
Pierce-Arrow
Packard
Marmon
Hudson
Chalmers
Hupmobile
Chandler
Haynes
Chevrolet
Dort
Cole
Reo
Paige
Peerless
Pilot
Abbott
Pathfinder
White
Delco-Light
Murray
Bour-Davis

Buick
Oakland
Oldsmobile
Jeffery
Kissel Kar
Premier
Knox
Jordan
Liberty
Crane-Simplex
Stearns-Knight
Saxon
Stutz
National
Velie
Jackson
Apperson
Anderson
Phianna
Locomobile
Disbrow
Daniels

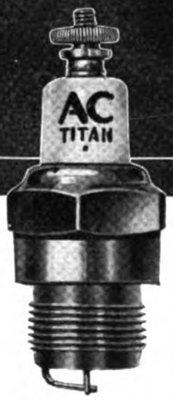


Westcott
McFarlan
Paterson
Detroiter
Davis
Lexington-Howard
Scripps-Booth
Monroe
Singer
Stephens
Dodge Bros.
McLaughlin (Canada)
Dorris
Duesenberg
American-La France
Hatfield
Henderson Bros.
Old Reliable Trucks

Federal Trucks
G.M.C. Trucks
Netco Trucks
Sandow Trucks
Signal Trucks
Brockway Trucks
Gabriel Trucks
Gramm-Bernstein Trucks
Moreland Trucks
Wilcox Trux
Sterling Trucks
Republic Trucks
Diamond T Trucks
Four Wheel Drive
Samson Tractor
Acme Trucks
Maxim Trucks
Menominee Trucks
M.H.C. Trucks
Riker Trucks
Stewart Trucks
Wisconsin Trucks



SPECIAL FOR FORDS
This is the plug we recommend for Ford Cars



⅞-inch Regular AC TITAN
This is the plug we recommend for Maxwells

THE price of plugs is a minor consideration when compared with the important function of this vital part; yet this most efficient plug costs no more than the common kind.

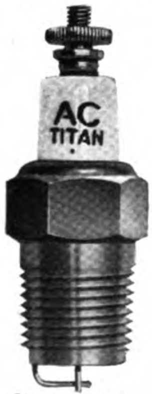
Because of conflicting claims the average owner is at sea in making selection. We do not make claims—we quote performance.

America's leading engineers in passenger car, truck, tractor and aviation depend on AC to keep their motors going. What better recommendation can you ask?

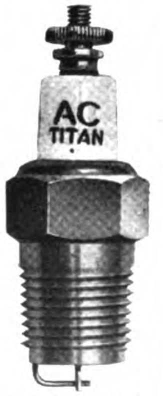
CHAMPION IGNITION COMPANY
**Sole Manufacturers, Flint, Michigan**

You have never had real Spark Plug satisfaction until you use a set of AC

*The Standard Spark Plug of America*



½-inch Regular AC TITAN
This is the plug we recommend for Willys-Overland



½-inch Regular AC TITAN
This is the plug we recommend for Studebakers

# Over 11,900 retail merchants failed last year

Bankers and wholesalers are interested in these figures. They lose when the merchant fails.

Up-to-date National Cash Registers stop lax methods in Retail Stores—save time, work and money.

And they enable a merchant without delay to give a complete, reliable statement of his business.

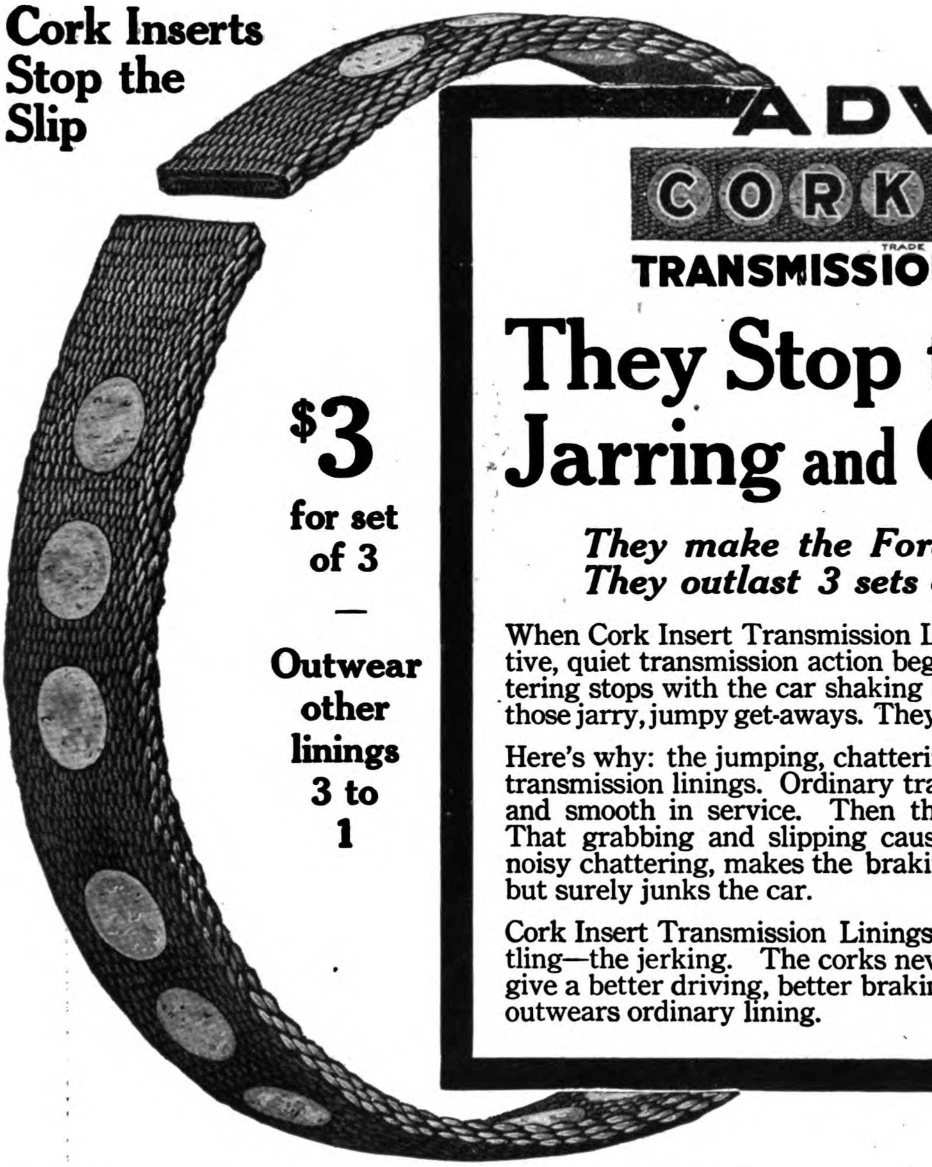
Every banker and wholesaler should investigate the N. C. R. System. He will then recommend it to the merchant.

Our registers are sold on small monthly payments. 5 per cent off for cash.

*Write today for literature* *Address Department 36.*

**THE NATIONAL CASH REGISTER COMPANY, Dayton, Ohio**

**Cork Inserts Stop the Slip**



**$3 for set of 3**

—

**Outwear other linings 3 to 1**

**ADVANCE**

**CORK INSERT**

TRADE MARK REG. COPYRIGHTED 1917

**TRANSMISSION LININGS FOR FORDS**

# They Stop the FORD Jarring and Chattering

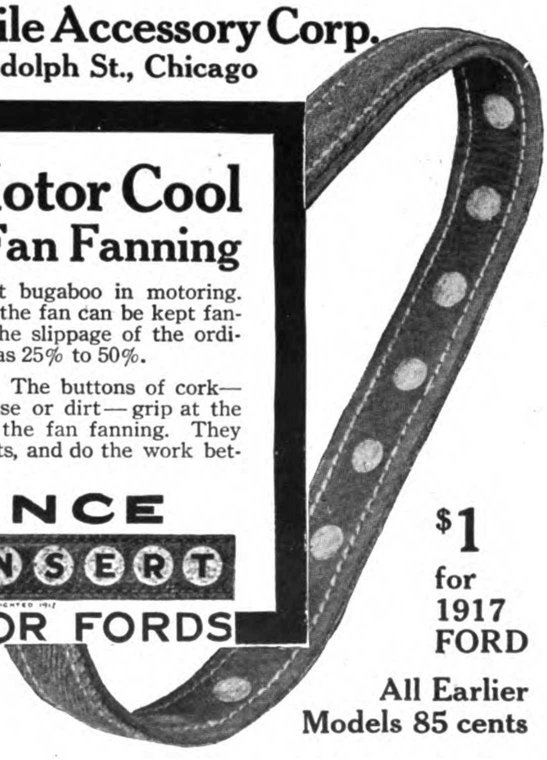
***They make the Ford Brake BRAKE!***
***They outlast 3 sets of ordinary linings***

When Cork Insert Transmission Linings go on a car, smooth, positive, quiet transmission action begins. They end those noisy, chattering stops with the car shaking like a tree in a gale. They stop those jarry, jumpy get-aways. They eliminate those lurchy reverses.

Here's why: the jumping, chattering, lurching, is caused by faulty transmission linings. Ordinary transmission linings soon get hard and smooth in service. Then they slip when brought into use. That grabbing and slipping causes all the jerking, sets up the noisy chattering, makes the braking action uncertain and slowly but surely junks the car.

Cork Insert Transmission Linings eliminate the slipping—the rattling—the jerking. The corks never get hard or slippery. They give a better driving, better braking car and a lining that greatly outwears ordinary lining.

**Advance Automobile Accessory Corp.**
Dept. I 3-1 56 East Randolph St., Chicago



## Keeps the Motor Cool by keeping the Fan Fanning

Overheating—that's the biggest bugaboo in motoring. Overheating is largely avoided if the fan can be kept fanning by a belt that don't slip. The slippage of the ordinary Ford fan belt runs as high as 25% to 50%.

Cork Insert Fan Belts don't slip. The buttons of cork—unaffected by water or oil, grease or dirt—grip at the first turn of the motor and keep the fan fanning. They outwear several ordinary fan belts, and do the work better as long as they last.

**ADVANCE**

**CORK INSERT**

TRADE MARK REG. COPYRIGHTED 1917

**FAN BELT FOR FORDS**

**$1 for 1917 FORD**

All Earlier Models 85 cents

## Order From Your Jobber

Order at least a dozen sets of Cork Inserts next time your jobber's salesman drops in. Cork Inserts mean better profit for you—better service and satisfaction for the user. They are the livest line in the field. Strongly advertised. Your customers know about them. Stock them and they'll move fast. Send coupon if your jobber can't supply you, and get started selling them.

**Dealer's Coupon** Check and Mail Today

**Advance Automobile Accessories Corp.**
Dept. I 3-1 56 East Randolph St., Chicago

☐ Send one dozen sets of Advance Cork Insert Transmission Linings for Fords.

☐ Send one dozen Advance Cork Insert Fan Belts, 1917 Ford.

☐ Send one dozen Advance Cork Insert Fan Belts, 1916 or earlier model Ford.

[Regular dealer discounts to apply.]

Name ........................................

City .......................... State ..................

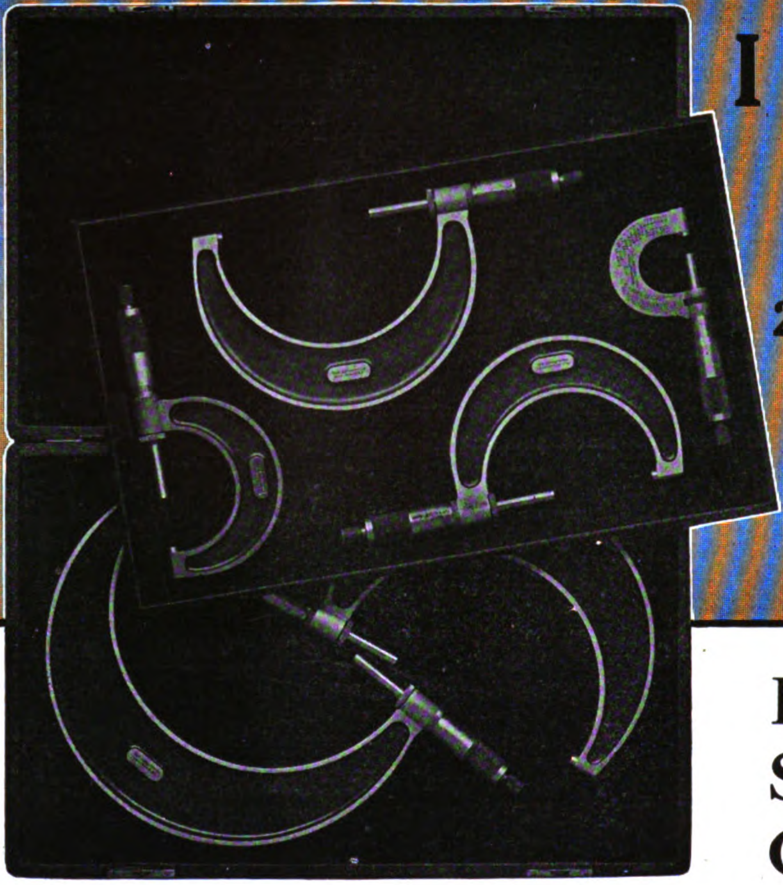
Jobber's Name ........................................

# Starrett Micrometers

## IN SETS

**Sizes 1″–6″**
**or**
**25 mms to 150 mms**

**Furnished with or without velvet lined leather cases.**



## For Service Stations and Garages

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The ACCESSORY and GARAGE JOURNAL
Devoted Exclusively to the Automobile Trade and Allied Interests.

VOL. VII. PAWTUCKET, R. I., SEPTEMBER 1917 No. 5

# Accessory Jobbers Plan Dealer Assistance

## National Association at Big Autumn Meeting Insists That It Is Working in Harmony With the Government for Modern Methods of Trade Improvement—Fund to Defend Federal Suit

The members of the National Association of Automobile Accessory Jobbers at their autumnal meeting at French Lick Springs cast a vote of confidence in their national commissioner, William M. Webster and their board of officers and also authorized the raising of a fund of $50,000 to defray the expenses of the legal action necessary in disproving the government's charges which were made the basis of indictments recently brought against the organization and its members.

Commissioner Webster made a statement to the members outlining the situation created by the indictments, and spoke of how the association had worked in harmony with the government, its new business laws and in có-operation with the department of justice.

Probably the most important action taken at the meeting was the inauguration of a campaign of education among dealers to encourage them to adopt more modern business methods and improve their condition. This was suggested in a report of the committee on assisting the trade and the members unanimously voted $7,500 to defray the expenses of the campaign.

A large amount of new business was brought up for discussion and disposed of and 35 new members were elected, 15 on the active roll and 20 as associates. The new members in the jobbing trade are:

Auto Supply Co., Milwaukee, Wis.; Bittle-Leftwich Co., St. Louis, Mo.; Bowman Bros., Ltd., Saskatoon, Sask.; Cedar Rapids Pump Co., Cedar Rapids, Ia.; Central Tire Co., Salina, Kan.; Chapin Co., Calgary, Alta.; W. E. Cody Co., Columbus, Ga.; Front-Market Motor Supply Co., Harrisburg, Pa.; Great Western Saddlery Co., Ltd., Winnipeg; Meadows-Price Co., Roanoke, Va.; Michigan Tire and Accessories Co., Grand Rapids, Mich.; Owens-Merrit Co., Inc., Danville, Va.; S. S. Parmalee Co., Macon, Ga.; Western Motor Supply Co., El Paso, Tex.; York Supply Co., Greenville, O.

The following manufacturers were elected to membership: Adamson Manufacturing Co. of Canada, Hamilton, Ont.; American Hardware Corp., Corbin Screw Division, New Britain, Conn.; Burd High Compression Ring Co., Rockford, Ill.; Canadian Lamp and Stamping Co., Fort, Ont.; Canadian National Carbon Co., Toronto, Ont.; Canton Auto Parts Manufacturing Co., Canton, O.; Challoner Co., Oshkosh, Wis.; Detroit Battery Co., Detroit; Francis-Rand Co., Cleveland, O.; Heiser Special Tool Co., Kingston, Mo.; Hide Leather and Belting Co., Indianapolis; J. & B. Manufacturing Co., Pittsfield, Mass.; Kingzinger, Bruce & Co, Ltd., Niagara Falls, Ont.; Legalite Corp., Boston, Mass.; Line-Hansen & Kimball Co., Moose Jaw, Sask.; Macbeth-Evans Glass Co., Pittsburgh, Pa.; McKinnon Dash Co., St. Catherines, Ont.; Richards-Wilcox Canadian Co., London, Ont.; R. G. Ruddiman Co., Muskegon, Mich.; Splitdorf Electrical Co. of New York, Toronto branch, Toronto, Ont.

It was announced that the credit bureau of the association had handled claims of $169,441 and secured payment of nearly $100,000. The treasurer's report showed a surplus of $47,387.56, of which amount $10,000 is invested in Liberty bonds.

In the course of the discussions on business subjects the matter of cash discounts and service charges on returned goods came up, but no definite action was taken on the matter. The fact of adverse spotlight legislation in some of the states was discussed and it was proposed that some action be taken to ameliorate conditions. The members voted against exhibiting in any more shows than are already patronized by the manufacturers and authorized the committee that was appointed to buy an ambulance for the government to expend the $2000 appropriated for the purpose in Red Cross work.

It was announced that Wilkerson, Castles & Potter, attorneys of Chicago, and Wise & Thompson of New York, had been retained as counsel for the association in the indictment matter. Mr. James H. Wilkerson of the senior counsel discussed the indictment and urged the members to give their full and undivided support to the association, and Warren D. Chase, president of the Rowe-Calk Co., who is also an attorney, spoke of the legal aspects of the case.

The committee on assisting trade was enlarged by the addition of George B. Shearer of Gaul, Derr & Shearer, Philadelphia, and George Brunner. The meeting was the largest ever held by the organization, over 305 registering at the convention. Members enjoyed themselves in various ways during their leisure time playing golf, tennis and bridge. Miss E. H. Everhard of Oshkosh, Wis., won the auction bridge party and the silver vanity case donated by the E. A. Laboratories, Brooklyn, N. Y. Clarke Powell, Omaha, and George T. Briggs of Wheeler & Schebler, Chicago, won the doubles tennis match.

The next meeting of the association will be held in New York during the week of the National Automobile Show. On the last two days of the week, Jan. 11 and 12, the directors and committees will meet and the general session will be held Jan. 14, 15, 16. The place of the convention has not been selected as yet.

Commissioner Webster and the other principals in the suit came direct to New York after the meeting and entered bail for trial in the United States court.

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On the following page is given the complete list of the membership of the National Automobile Accessory Jobbers Association as corrected after the close of the French Lick Springs meeting and incorporating the new admissions.

# ACCESSORY JOBBERS LIST

**List of jobbers compiled by National Association of Automobile Accessory Jobbers. .Symbol * indicates members of the association. Those unmarked are not members. Associate members are manufacturers and not jobbers. Those marked *, and the Associate Members, constitute the membership of the association.**

### ALABAMA.

*Johnson Tire Co............Montgomery
Moore-Handley Hdw. Co.....Birmingham

### ARKANSAS.

Rose-Lyon Hardware Co.....Little Rock

### CALIFORNIA.

*Auto Tire Co...................San Diego
Beckley-Ralston Co.......San Francisco
*Campbell-Collins Co. ..........San Jose
*Chanslor & Lyon Co......San Francisco
*Chanslor & Lyon Co.........Los Angeles
*Chanslor & Lyon Co...............Fresno
*Chanslor & Lyon Co.............Oakland
Day & Co., E. J....................Oakland
Dunham, Carrigan & Hayden Co.
........................San Francisco
*Electric Appliance Co......San Francisco
*Featherstone, E. A. .........Los Angeles
*Gavin-Williams Co. ..........San Diego
Kimball-Upson Co. .........Sacramento
*Lathan Auto Supply Co....San Francisco
*McCoy Motor Supply Co...San Francisco
Pacific Hdw. & Steel Co...San Francisco
Remick Co., James S.........Sacramento
Union Hdw. & Metal Co.....Los Angeles
Waterhouse-Lester Co. .....Los Angeles
Waterhouse-Lester Co. .........Oakland
Waterhouse- Lester Co.....San Francisco
*Weinstock-Nichols Co.....San Francisco
Western Heavy Hdw. & Iron Co. .Oakland
*Western Rub. & Supply Co..Los Angeles

### COLORADO.

*Auto Equipment Co.............Denver
*Denver Auto Goods Co...........Denver
*Foster Auto Supply Co...........Denver
Quinn & McGill Motor Supply Co..Denver
*B. K. Sweeney Electrical Co.....Denver

### CONNECTICUT.

Horton, Henry .............New Haven
*Mersick & Co., C. S...........New Haven
*Post & Lester Co...............Hartford
*Post & Lester Co............Bridgeport
*Post & Lester Co...............New Haven
*Post & Lester Co...........New London
*Post & Lester Co..............Waterbury

### DISTRICT OF COLUMBIA.

*Miller Bros. Auto & Supply
House ......................Washington
*National Electric Supply Co..Washington
*Rubel & Co., Charles.......Washington

### FLORIDA.

*Baughman Co., G. Norman.......Tampa
*Greene Co., C. W.................Tampa

### GEORGIA.

*Alexander-Sewald Co............ Atlanta
*W. E. Cody Co...................Columbus
*Elyea-Austell Co. .................Atlanta
*Parmalee Co., S. S....................Macon

### ILLINOIS.

*Automobile Supply Co...........Chicago
Beckley-Ralston Co. ..........Chicago
Butler Brothers .............Chicago
*Chicago Automobile Sup. House..Chcago
Chicago Rubber Co................Chicago
*Collins Co., E. B..................Danville
*Electric Appliance Co............Chicago
*Graham-Selzer Co....................Peoria
Hibbard, Spencer, Bartlett Co...Chicago
*Hine-Watt Mfg Co..................Chicago
*Kimball & Co., E. D.................Chicago
*Motor Car Supply Co...............Chicago
*Motor Equipment Co...............Chicago
*National Electric & Auto Sup. Co..Peoria
*Reid Motor Supply Co............Quincy
Tenk Hardware Co...................Quincy
Western Electric Co. ..........Chicago

### INDIANA.

Central Rubber & Sup. Co...Indianapolis
*Doherty Sheerin & Co.......Indianapolis
*Gibson Co. ..................Indianapolis
Hearsey Co., H. T...........Indianapolis
*Holliday & Co., W. J........Indianapolis
*Orr Iron Co. ..................Evansville
*Van Camp Hdw. & Iron Co..Indianapolis
Wheeler Co., W. R...........Indianapolis

### IOWA.

*Cedar Rapids Pump Co.....Cedar Rapids
Central Automobile Sup. Co..Des Moines
*Fitch Co., R. F. & W. B.......Oskaloosa
*Herring Motor Co.............Des Moines
*Hippee States Co.............Des Moines
*Repass Auto Co...................Waterloo
*Schultz Auto Supply Co.......Sioux City
*Sieg Co. ........................Davenport
Sioux City Iron Co...............Sioux City
*Warnock Co., William .......Sioux City

### KANSAS.

*Auto Supply & Tire Co...........Wichita
*Auto Supply Co., The........Hutchinson
Blish, Mize & Silliman.........Atchison
*Central Tire Co......................Salina
Colladay Hardware Co.......Hutchinson
*Hagberg Automobile Sup. Co.....Wichita
Harwi Hardware Co., A. J.....Atchinson
Lee Hardware Co....................Salina
*Price Auto Equipment Co........Wichita
*Shattuck-George Iron Co........Wichita
*Southwick Auto Supply Co........Topeka
Thompson Hdw. Co., W. A. L.....Topeka

### KENTUCKY.

Belnap Hdw. & Mfg. Co........Louisville
*Cowan & Co., Andrew........Louisville
Harbison & Gathright Co.....Louisville
*Louisville Auto Supply Co.....Louisville
*Warner Co., Roy E...........Louisville

### LOUISIANA.

*Electric Appliance Co.......New Orleans
*Interstate Electric Co.......New Orleans
Lee Hardware Co.............Shreveport
*Shuler Rubber & Sup. Co...New Orleans

### MAINE.

Bailey Co., James..............Portland
*Bragg & Sons, N. H.............Bangor
Cleveland & Co., L. W...........Portland
Darling Automobile Co. .........Auburn
Rice & Miller ..................Bangor

### MARYLAND.

*Auto Supply Co...............Baltimore
Coggins & Owen..............Baltimore
Norris & Sons, R. W..........Baltimore

### MASSACHUSETTS.

American Motor Equipment Co...Boston
Balston & Goulding Co........Worcester
Bigelow & Dowse Co............Boston
*Boice-Perrine Co. ................Boston
*Butts-Ordway Co. ...............Boston
Decatur & Hopkins Co............Boston
Iver Johnson Sporting Goods Co..Boston
Iver Johnson Sport. Goods Co..Fitchburg
Iver Johnson Sport. Goods Co..Worcester
*Linscott Supply Co................Boston
Motor Car Equipment Co.........Boston
*Post & Lester Co....................Boston
*Post & Lester Co............Springfield
*Post & Lester Co. ............Worcester
*Tarbell-Watters Co. .........Springfield
U. S. Rubber Co....................Boston
*Wetmore-Savage Co. ............Boston

### MICHIGAN.

*Automobile Equipment Co........Detroit
*Automobile Supply Co...........Detroit
*Becker Auto Co..........Grand Rapids
*Bowman Co., E. A.................Detroit
Buhl Sons ........................Detroit
*Cummings Brothers ................Flint
*General Sales Co...................Detroit
Hall Co., Sherwood........Grand Rapids
*Michigan Tire & Accessories Co.
...................... Grand Rapids
Morley Bros. .......................Saginaw
*Roehm & Davison .................Detroit
Saginaw Hardware Co...........Saginaw
Stamdart Brothers .............Detroit
*Tisch Auto Supply Co.....Grand Rapids

### MINNESOTA.

*Electric Mfg Co.................St. Paul
Empire Tire & Rubber Co...Minneapolis
Farwell, Ozmun, Kirk Co........St. Paul
Hackett, Gates & Hurty.........St. Paul
Hardenberg, P. R. L..............St. Paul
Hudson & Thurber Co.......Minneapolis
Janney-Semple-Hill Co. ....Minneapolis
Kelly-How-Thompson Co. .......Duluth
Marshall-Wells Hardware Co.....Duluth
*Minneapolis Iron Store Co...Minneapolis
*Nicols, Dean & Gregg............St. Paul
Nott Co., W. C...............Minneapolis
Plant Rubber Co............Minneapolis
*Reinhard Brothers Co.......Minneapolis
Scheffer & Rossum Co...........St. Paul
*Smith & Co., C. J................St. Paul
*Sommers & Co., G................St. Paul
*Western Motor Sup. Co.......Minneapolis
*Williams Hardware Co.......Minneapolis

### MISSOURI.

*Beck & Corbitt Iron Co.........St. Louis
*Bittle-Leftwich Co..............St. Louis
*Bonniwell-Calvin Iron Co...Kansas City
*Campbell Auto Sup. Co., Fred..St. Louis
Campbell Iron Co...............St. Louis
*Equipment Co. .............Kansas City
*Farmer Auto Supply Co.........St. Joseph
*Geller, Ward & Hasner Hdw. Co..St. Louis
*Kansas City Auto Sup. Co....Kansas City
Joplin Supply Co. ................Joplin
*Missouri Auto Specialty Co.....St. Louis
*Motor & Machinists Sup. Co..Kansas City
*Phoenix Auto Supply Co.........St. Louis
Richards & Conover Hdw. Co..Kansas City
Shapleigh Hardware Co..........St. Louis
Sickles Saddlery Co..............St. Louis
Simmons Hardware Co..........St. Louis
Sligo Iron Store Co..............St. Louis
*Straus Saddlery Co. ............St. Louis
Townsley Metal & Hdw. Co..Kansas City
Wyeth Hardware Co............St. Joseph

### MONTANA.

*Northwestern Auto Sup. Co., The.Billings

### NEBRASKA.

*Korsmeyer Co., The.............Lincoln
Lee-Colt Andreesen Hdw. Co......Omaha
*Master Sales Co...................Omaha
*Nebraska-Buick Auto Co.........Lincoln
Omaha Rubber Co.................Omaha
*Paxton & Gallagher...............Omaha
*Paxton & Gallagher.............Auburn
*Powell Supply Co.................Omaha
*U. S. Auto Supply Co.............Omaha
*Western Automobile Supply Co...Omaha
Wright & Wilhelmy Co...........Omaha

### NEW JERSEY.

*Economy Auto Supply Co.......Newark
Motor Car Equipment Co........Newark
Thompson-Reilly Co. ...........Newark

### NEW YORK.

Albany Hardware & Iron Co.....Albany
Auto Hdw. & Equipment Co....New York
Barker, Rose & Clinton Co.......Elmira
*Bindrim, Julius ...............Brooklyn
*Davis-Browne Electric Co.........Ithaca
*Lowe Motor Supplies Co.......New York
Martin-Evans Co. .............Brooklyn
Marshall Co., A. H.............Plattsburg
McRae & Co., H. A...........Glens Falls
Meyers Hdw. Co., M. P........Plattsburg
Motor Car Equipment Co......New York
Olmstead Co., The .............Syracuse
*Picard & Co., A. J............New York
*Pruden Hdw. Co., W. E........New York
*Rickard Co., Jay A.........Schenectady
Roby Co., S. B..................Rochester
Straus & Co., Joseph............Buffalo
Thompson, H. D..................Malone
U. S. Rubber Co...............Rochester
U. S. Rubber Co.................Syracuse
U. S. Rubber Co...................Buffalo
*Utica Cycle & Supply Co..........Utica
*Van Benschoten, John.....Poughkeepsie
*Whittemore-Sim Co. ..........New York

### NEVADA.

Nevada Auto Supply Co............Reno

### NORTH CAROLINA.

*Carolinas Auto Supply House..Charlotte

### NORTH DAKOTA.

*Grant, J. D. ........................Fargo

### OHIO.

Bingham Co., W...............Cleveland
Bostwick & Braun...............Toledo
Canton Hardware ..............Canton
*Cooper Rubber Co., I. J.......Cincinnati
*C. & D. Auto Supply Co.......Cincinnati
*Dine-De Wees Co...............Canton
*Fen Far Co......................Cleveland
*Griswold-Sohl Co. ............Columbus
Hardware Supply Co.............Akron
*Justis & Parker Co............Columbus
Lockwood-Luetkemeyer-Henry Co.
........................ Cleveland
*M. & M. Co......................Cleveland
*Ohio Rubber Co...............Cincinnati
*Pennsylvania Rubber Sup. Co...Cleveland
*Roberts-Toledo Auto Co..........Toledo
*Schroyer & Co., G. W...........Dayton
Stanbaugh-Thompson Co. ...Youngstown
Toewater & Co., G. M.........Cincinnati
*Toledo Rubber Co.................Toledo
*Toledo Tire and Supply Co.......Toledo
*Union Supply Co..................Toledo
Worthington Co., George......Cleveland
*York Supply Co...............Greenville

### OKLAHOMA.

*Burwell-Smith Sup. Co...Oklahoma City
*Burwell Supply Co., J. B., Oklahoma City
*Ratcliff-Sanders Grocer Co........Tulsa
Richards & Conover Hardware Co.
.....................Oklahoma City
Severin Tire and Sup. Co..Oklahoma City

### OREGON.

Archer-Wiggins Co. ...........Portland
*Ballou & Wright...............Portland
*Chanslor & Lyon Co............Portland
Marshall-Wells Hdw. Co........Portland

### PENNSYLVANIA.

*Beers Brothers Co...............Oil City
*Berrodin Rubber Co........Philadelphia
*Cahall Motor Supply Co.....Philadelphia
Doubleday-Hill Electric Co...Pittsburgh
*Dyke Motor Supply Co.........Pittsburgh
*Front Market Motor Sup. Co..Harrisburg
Fry Keyser ........................Reading
*Gaul, Derr & Shearer Co.....Philadelphia
*Hilliard & Yokes......................Erie
*Jackson Motor Supply Co.....Pittsburgh
*Johnstown Automobile Co.....Johnstown
*Lansing Hardware Co..........Scranton
Logan & Gregg Hdw. Co.......Pittsburgh
*Manufacturers Supplies Co..Philadelphia
*McCullough & Son, J. B.....Philadelphia
Miller-Ecrot Co. ...........Philadelphia
Nock Co., George W.........Philadelphia
*Pittsburgh Auto Equip. Co...Pittsburgh
*Roberts Elec. Sup. Co., H. C..Philadelphia
Supplee-Biddle Co. .........Philadelphia
U. S. Rubber Co..............Philadelphia
*Woodwell Co., Joseph.........Pittsburgh

### RHODE ISLAND.

*Belcher & Loomis Hdw. Co...Providence
*Goodby-Rankin Co. ..........Providence
*Post & Lester Co..............Providence
*Providence Auto Equip. Co....Providence
*Waite Auto Supply Co.........Providence

### SOUTH CAROLINA.

*Alderman, Jr., D. W............Florence
Bailey-Lebby Co..............Charleston
*Cameron & Barkley Co.......Charleston
*Francke & Co., C. D..........Charleston

### SOUTH DAKOTA.

*Brownell Co., H. F...........Sioux Falls
Dakota Iron Store............Sioux Falls
L. & L. Motor Supply Co.....Sioux Falls
*Paxton & Gallagher Co........Deadwood

### TENNESSEE.
Gray & Dudley Hdw. Co........Nashville
•Osburn Automobile Sup. Co.....Memphis
•Southern Auto Supply Co...Chattanooga

### TEXAS.
•Borderland Auto Supply Co.....El Paso
•Electric Appliance Co.............Dallas
•Ferris-Dunlap Auto Supply Co....Dallas
•Fiske Co. of Texas..............Dallas
Frank Saddlery Co, L.......San Antonio
•General Auto Supply Co........Amarillo
•Hawkins Auto Sup. Co., G. W...Houston
Krakauer, Zork, Moyes Co......El Paso
Meyer Co., Joseph F...........Houston
Peden Iron and Steel Co........Houston
Peden Iron and Steel Co.....San Antonio
•Spencer-Carroll Co. ...............Waco
•Tri-State Motor Co.............El Paso
Walter Tips Co..................Austin
•Western Motor Supply Co.......El Paso

### UTAH.
•Capital Electric Co........Salt Lake City
•Intermoutain Electric Co..Salt Lake City
Salt Lake Hardware Co...Salt Lake City

### VERMONT.
Hagar Hdw. & Paint Co.......Burlington

### VIRGINIA.
•Chemi Co. ......................Richmond
•Crump Co., B. T................Richmond
•Meadows-Price Co. ............Roanoke
•Owens-Merritt Co. Inc..........Danville
•Piedmont Hardware Co.........Danville
•Talman Auto Supply Co........Richmond

### WASHINGTON.
•Automobile Supply Co...........Tacoma
•Ballou & Wright.................Seattle
•Chanslor & Lyon................Seattle
•Chanslor & Lyon...............Spokane
•Chanslor & Lyon................Tacoma
Child, Day & Churchill Co......Spokane
Holly-Mason Hardware Co......Spokane
Marshall-Wells Hardware Co.....Seattle
Marshall-Wells Hardware Co....Spokane
Seattle Hardware Co............. Seattle
Spokane Cycle & Supply Co......Spokane
Whiton Hardware Co............Seattle

### WEST VIRGINIA.
•Williams Hardware Co.......Clarksburg

### WISCONSIN.
•Andrae & Sons Co., Julius....Milwaukee
•Auto Supply Co..............Milwaukee
•Gross Hardware Co., Philip..Milwaukee
•Morley-Murphy Hardware Co..Green Bay
Pritzlaff Hdw. Co., John......Milwaukee
•Shadbolt & Boyd Iron Co....Milwaukee
U. S. Rubber Co..............Milwaukee
•Western Motor Supply Co....Milwaukee

### WYOMING.
•Paxton & Gallagher Co.........Cheyenne

### CANADA.
•Bowman Bros. Ltd....Saskatoon, Sask.
•Canadian Fairbanks-Morse Co..Montreal
•Chapin Co. ...............Calgary, Alta.
•Cutten & Foster...................Toronto
•Great Western Saddlery Co., Ltd.
.........................Winnipeg, Man.
•Hyslop Bros. ....................Toronto
Marshall-Wells Co. ...........Winnipeg
•Millen & Son, Ltd., John..........Montreal
•Motor Car Supply Co.......Calgary, Alta.
•Petrie of Montreal, H. W., Ltd..Montreal
•Western Motor Sup., Ltd...Regina, Sask.

## ASSOCIATE MEMBERS.

### COLORADO.
Colorado Tire & Leather Co.......Denver

### CONNECTICUT.
American Hdw. Corp., Corbin Screw
Div. ..................New Britain
Clover Mfg. Co. ..................Norwalk
Connecticut Tel. & Electric Co....Meriden
Fitzgerald Mfg. Co.............Torrington
Hall-Thompson ..................Hartford
Raybestos Co. .................Bridgeport
Rowe Calk Co....................Hartford

### ILLINOIS.
Advance Felt Spec. & Cutting Co..Chicago
American Electric Co............Chicago
Atlas Auto Supply Co............Chicago
Atlas Specialty Mfg. Co..........Chicago
Bailey Non-Stall Differential Corp.Chicago
Browne & Caine..................Chicago
Byrd High Compression Ring Co. Rockford
Chicago Fuse Mfg. Co............Chicago
Edelman & Co., E................Chicago
Federal Miniature Lamp Div. of
General Electric Co.........Chicago
Findeisen & Kropf Mfg. Co.......Chicago
Gardner Governor Co..............Quincy
Halladay Co., L. P...............Streator
Illinois Brass Mfg. Co............Chicago
Imperial Brass Mfg. Co...........Chicago
Jefferson Electric Mfg. Co........Chicago
Mayo-Skinner Mfg. Co............Chicago
Metal Spec. Mfg. Co..............Chicago
Nelson Mfg. Co., A...............Chicago
Niehoff & Co., Paul G............Chicago
Peoria Overhead Washer Co........Peoria
Premier Electric Co...............Chicago
Rhodes & Co., Jas. H............Chicago
Stanwood Equipment Co. ........Chicago
Sunderland Mfg. Co..............Chicago
Tuthill Spring Co.................Chicago
U. S. Ball Bearing Mfg. Co........Chicago
Van Cleef Brothers...............Chicago
Vester Accumulator Co...........Chicago
Victor Mfg. & Gasket Co..........Chicago
Warner Lenz Co...................Chicago
Weaver Mfg. Co. .............Springfield
Wiedenhoff, Jos. H...............Chicago

### INDIANA.
Crum-Wiley Co. .....................Peru
Double Fabric Tire Co............Auburn
Gates Mfg. Co................Indianapolis
Hide, Leather & Belting Co...Indianapolis
H. & D. Co......................Goodland
Indiana Lamp Co.............Connersville
Oakes Co. The ..............Indianapolis
Wheeler-Schebler Carb. Co...Indianapolis

### IOWA.
C. & E. Mfg. Co............Marshalltown
Davenport Mfg. Co............Davenport

### KANSAS.
Crum Mfg. Co......................Ottawa

### MASSACHUSETTS.
Gray & Davis, Inc..................Boston
Hill-Smith Metal Goods Co.........Boston
Legalite Corp. ....................Boston
Mossberg Co., Frank............Attleboro
Motor Specialties Co.............Waltham
Standard Woven Fabric Co.......Walpole
Walden-Worcester, Inc.........Worcester
Wonder-Mist Co. ..................Boston

### MICHIGAN.
Detroit Battery Co.................Detroit
Edmunds & Jones Corp.............Detroit
Hayes Mfg. Co.....................Detroit
Lockwood, Ash Motor Co.........Jackson
National Standard Co...............Niles
New Era Spring & Specialty Co...Detroit
Piston Ring Co..................Muskegon
Rudiman Co., F. G..............Muskegon
Sparks-Withington Co. ..........Jackson
White Star Refining Co............Detroit

### MINNESOTA.
Durkee-Atwood Co. ..........Minneapolis

### MISSOURI.
Apex Mfg. Co.....................St. Louis
Carter Carburetor Co.............St. Louis
Curtis Pneumatic Mch. Co.......St. Louis
Heiser Special Tool Co..........Kingston
McQuay-Norris Mfg. Co..........St. Louis
Nu-Back Mfg. Co.................St. Louis
Pull-U-Out Sales Co..............St. Louis
Shurnuff Mfg. Co.................St. Louis

### NEBRASKA.
Haney & Co., J. H...............Hastings

### NEW JERSEY.
Asbestos & Rub. Works of N. J...Camden
Endurance Tire and Rubber Co.
...................New Brunswick
Hartford Co., Edw. V., Inc.....Jersey City
Klaxon Co. .......................Newark
Rajah Auto Supply Co.........Bloomfield
Splitdorf Electrical Co............Newark
Thermoid Rubber Co.............Trenton
Tingley & Co., Charles O.........Rahway
Voorhees Rubber Co..........Jersey City
Whitehouse-LeCompte Mfg. Co....Newark

### NEW YORK.
American Ever Ready Works..L. I. City
Benford Mfg. Co..............Mt. Vernon
Brunner Mfg. Co..................Utica
Corning Glass Works...........Corning
Crescent Tool Co.............Jamestown
E. A. Laboratories Co..........Brooklyn
Empire China Works...........Brooklyn
Grossman Mfg. Corp., Emil.....Brooklyn
Herz & Co....................New York
Indian Refining Co............New York
Johns-Manville Co., H. W.......New York
Judd & Leland Mfg. Co....Clifton Springs
Kellogg Mfg. Co................Rochester
Keyless Auto Clock Co.........New York
Laminated Shim Co.............New York
Manhattan Electrical Sup. Co...New York
Manzel Brothers Co...............Buffalo
Metal Stamping Co...............L. I. City
Mosler & Co., A. R.............Mt. Vernon
Motor-Meter Co. ...............New York
N. Y. & N. J. Lubricant Co.....New York
Piel Co., G.....................L. I. City
Platt & Washburn Refining Co..New York
Schlesinger-Redburn Corp......New York
Sears-Cross Co.................Brooklyn
Stevens & Co...................New York
U. S. Light & Heat Corp....Niagara Falls
West Side Foundry Co..............Troy
Wolverine Lubricants Co.......New York

### OHIO.
Adamson Mfg. Co..........East Palestine
Ashland Mfg. Co...................Ashland
Au-To Compressor Co........Wilmington
Brown Spring Oiler Co..........Cleveland
Canton Auto Parts Mfg. Co.........Canton
Caskey-Dupree Mfg. Co..........Marietta
Central Brass & Fixture Co...Springfield
Champion Spark Plug Co..........Toledo
Columbus Varnish Co..........Columbus
Corcoran-Victor Co. ..........Cincinnati
Dall Motor Parts Co...........Vermillion
Davies-Young Soap Co............Dayton
Firestone Tire and Rubber Co......Akron
Francis-Rand Co................Cleveland
General Tire & Rubber Co..........Akron
Globe Machine & Stamping Co...Cleveland
Gordon Co., J. P...............Columbus
Heinze Co., John O.............Springfield
Hoover Co., W. H.............New Berlin
Jiffy-Jack Co. .................Cleveland
K-W Ignition Co. ..............Cleveland
Lawson Co., F. H.............Cincinnati
Marvel Accessories Mfg. Co.....Cleveland
McGraw Tire & Rubber Co..East Palestine
National Carbon Co.............Cleveland
National Motor Supply Co.....Painesville
Northwestern Chemical Co......Marietta
Packard Electric Co..............Warren
Perkins-Campbell Co. ..........Cincinnati
Peters & Herron Dash Co.......Columbus
Reflex Ignition Co..............Cleveland
Sharp Spark Plug Co............Cleveland
Standard Parts Co..............Cleveland
Sterling Mfg. Co................Cleveland
Temco Electric Motor Co...........Leipsic
Vichek Tool Co..................Cleveland
Victor Rubber Co..............Springfield
Vital Mfg. Co....................Cleveland

### PENNSYLVANIA.
American Bronze Co..............Berwyn
Atwater Kent Mfg. Works...Philadelphia
Commercial Lubricating Co..Philadelphia
Crew-Levick Co. ............Philadelphia
Goodrich-Lenhart Mfg. Co...Philadelphia
Macbeth-Evans Glass Co........Pittsburg
Silvex Co. ..............South Bethlehem
Standard Steel Box Co.........Bridgeville

### RHODE ISLAND.
Auto Parts Co..................Providence

### SOUTH CAROLINA.
General Asbestos & Rub. Wks..Charleston

### TENNESSEE.
American Lava Co............Chattanooga
Continental Piston Ring Co.....Memphis

### WASHINGTON.
Romort Mfg. Co....................Seattle

### WISCONSIN.
American Brass Foundry Co...Milwaukee
Auto Parts Mfg. Co...........Milwaukee
Challoner Co. ....................Oshkosh
Federal Rubber Mfg. Co.......Milwaukee
Fulton Co. ....................Milwaukee
Gemco Mfg. Co.................Milwaukee
Harvey Spring & Forging Co.....Racine
Higgins Spring & Axle Co.........Racine
Milwaukee Auto Engine & Supply
Co.........................Milwaukee
Shaler Co., C. A..................Waupun
Walker Mfg. Co....................Racine

### CANADA.
Adamson Mfg. Co. of Can..Hamilton, Ont.
Canadian Lamp & Stamping Co..Ford, Ont.
Canadian National Carbon Co., Ltd.
.......................Toronto, Ont.
Champion Spark Plug Co. of Canada
.......................Windsor, Ont.
Kingzinger, Bruce & Co., Ltd.
...................Niagara Falls, Ont.
Line-Hansen & Kimball Co.
....................Moosejaw, Sask.
McKinnon Dash Co.....St. Catherines, Ont.
Richards-Wilcox Canadian Co.
........................London, Ont.
Splitdorf Electrical Co. of N. Y.,
Toronto Branch......Toronto, Ont.

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## DENVER AUTO SHOW
## SET FOR NOV. 12-18.

The Automobile Trades Association Committee of the Chamber of Commerce of Denver will hold an automobile show in that city during the week of Nov. 12-18. The exhibition will be staged in the Auditorium under the management of G. A. Wahlgren, who managed the San Francisco show.

The committee is composed of: Chairman, Charles Hendy, Jr.; secretary, E. W. Johnson; L. E. Kelton, L. F. Mulconnery, H. G. Moock, R. C. Peete, J. C. Hadley, Harry Simpson, Hugo Mann, S. E. Norton, W. W. Barnett, W. P. Tyler, S. E. Howe, Jr.

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## MACMULLEN DISTRIBUTES
## CHEVROLET IN TEXAS FIELD.

B. J. MacMullen, formerly Pacific coast sales manager of the Willys-Overland Co., and later sales manager of the Chalmers Motor Co., has been appointed district manager of the Chevrolet Motor Co., with headquarters at Fort Worth, Tex.

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## G. L. W. SPRING OILERS.

The price of 20 cents quoted for G. L. W. Spring Oilers, in the August number of the Accessory and Garage Journal was taken from a price list no longer in effect. The present price is 30 cents each.

# ACCESSORY SHOW SCORES SUCCESS

## Chicago Exhibit to Be National Exposition for Accessories and Will Include All Cars

The National Exposition for Ford Accessories, held in the Chicago Coliseum during the last week of September exceeded the expectations of the promoters and exhibitors from a business point of view. There was a large attendance each day and while much smaller than the crowds that visit the annual automobile show, the visitors were bent on a business and only a small per cent. was made up of those who came through idle curiosity.

Sentiment among the participants and managers was so optimistic as a result of the business accomplished that plans were immediately made to hold a similar exhibition next year and to enlarge its scope so as to include fittings, attachments and accessories for all cars as well as the Ford. This decision lead to the changing of the name of the organization, under whose auspices the exposition was held and it will hereafter be known as the National Exposition for Accessories.

The products of over 250 manufacturers were shown in the 150 exhibit spaces and it would be difficult to tell which of the booths proved the most popular as a general interest was shown in everything judging from the reports made by exhibitors. Exhibitors of truck forming attachments made very gratifying sales, while some of the manufacturers exhibiting reported sales to jobbers running into five figures.

Carrying out the idea of a comprehensive exhibit to enable jobbers and dealers to get a line on needed stock for the coming season, every effort was made to interest these members of the trade and the efforts met with considerable success as jobbers were present from New England, the Pacific Coast, Canada and the south. The exhibit in itself was very complete, comprising practically every device made and sold for use on a Ford car as well as the various attachments made and used for converting the chassis into a commercial vehicle. Special bodies for Fords were also included and proved one of the most interesting features of the show, embodying new ideas in body design for light cars and one provided for increasing the passenger carrying capacity of the touring model.

No expense was spared in giving the exposition a proper setting, the exhibits being shown in individual booths, those in the centre of the hall being walled off with an attractive panneling supported by two columns, and enclosed by light railings Potted plants on top of the pillars lent a garden effect to the general decorative scheme. Red, White and blue bunting festooned along the roof girders formed a frame for the hundreds of American flags which were suspended from the ceiling.

The exhibitors at the exposition from Chicago, Ill, included the following: Chicago Pneumatic Tool Co., Nastor Equipment Co., Hercules Buggy Co., Wire Wheel Corporation of America, Grant Wire Wheel Co., The Reliance Co., Mechanical Belt Co., Perry Auto Lock Co.. Maltby Auto Specialty Co., Simplex Manufacturing Co., H. G. Paro Co., Essenkay Products Co., Ahlberg Bearing Co., K. D. Lamp Co., The Zinke Co., Gray-Heath Co., Shurnuff Manufacturing Co., S. C. Johnson & Son, Walker Ke-Les Lock Co., Metal Specialty Manufacturing Co., W. H. Howell Co., Sprague Manufacturing Co., Schlesinger Redburn Co., Brown Caine Co., American Machine Products Co., Hudford Truck Co., Axleford Truck Co.. Guarantee Motor Truck Co., U. S. Auto Supply Co., Kerosene Burning Carburetor Co., Fouts & Hunter Co., Atlas Specialty Manufacturing Co., Bear Manufacturing Co., Naber Shock Absorber Co., White Star Refining Co., Ehrman Tire and Rubber Co., National Wire Wheel Co., Auto Accessories Manufacturing and Sales Co., D. & D. Co., Instant Heater Co., U. & J. Carburetor Co., Defender Auto Lock Co., Simplicity Wheel Co., Swedish Crucible Steel Co., American Steel Supply Syndicate, Snideman Standard Tire Valve Co., Willard Co., Standley Skid Chain Co., Belt Auto Indemnity Association, L. & B. Truck Manufacturing Co., The Pan-American Rubber Co., General Patent Manufacturing Co., Ever Ready Truck Co., Lanham Starter Co., A. A. Lawder & Sons, Inc., The R. & R. Manufacturing Co., Security Auto Lock Co., Hand-D-Dim Co., Tri-Continental Corporation, Dayton Wire Wheel Co., Jefferson Electric Manufacturing Co., Detroit Auto Products Co., Advance Auto Accessories Corporation, Bailey Non-Stall Differential Corporation, Nelson Manufacturing Co., Kerosene Carburetor Co., Auto Remodeling Co., Peerless Spark Plug Co., Smith Form-A-Truck Co., Consolidated Utilities Corporation, Ford Seven Bodies, Redden Motor Truck Co., Illinois Gear and Radiator Works, Stahl Rectifier Co., Osgood Lens and Supply Co., William V. Hughes, New Starter Co.

Exhibitors from other cities were as follows:

Elka Manufacturing Co., San Francisco, Cal.; Pennsylvania Clock Co., Jeannette, Pa.; Carsweld Hammond Manufacturing Co., Boone, Ia.; Commercial Car Unit Co., Philadelphia, Pa.; Jensen Kohlert Manufacturing Co., St. Charles, Ill.

Several of the exhibitors are showing a varied line of manufacturers' products. The Zinke Co. is exhibiting products of the Indiana Lamp Co., Milwaukee Auto Engine and Supply Co., Romort Manufacturing Co., Hastings Manufacturing Co., Ewald Manufacturing Co., Chicago Rawhide Manufacturing Co., National Manufacturing Co., B. & E. Lock Co., Kales Stamping Co., A. S. Brock Rubber Co. and Champ Spring Co.

The Gray-Heath Co. is exhibiting products of the Bill Automatic Spark Retarder Co., L. B. Halladay Co., Motometer Co., X-Laboratories Co., Outlook Co., New York Coil Co., Continental Piston Ring Co., N. A. Petry, Hanson Mfg. Co., Barcolo Manufacturing Co., Standard Speedometer Co. and Hall Thompson Co.

H. G. Paro Co. displayed the products of Heinzelman Bros., Auto Accessories Co. and Ekern Bros.

### "FLATER FLIVER" SHOWS BLACK & DECKER GOODS.

The "Flater Fliver" recently put on the road by the Black & Decker Mfg. Co., Baltimore, Md., is not a speed demon, flying machine or other contraction to wipe out records or do stunts but is a perfectly naturally Ford car fitted out by this company to demonstrate their goods to the jobbers and prospects.

The "Flater Fliver," carries a No. 2 Lectreflater Tank Outfit mounted on the rear deck and permits the salesman to make demonstration of the unit at each place he calls. The outfit is characteristic of the Black & Decker products, being beautifully machined and finished.

### CHEVROLET MAKES NEW RECORDS WITH DIXONS.

Louis Chevrolet who established a new world's record for 100 miles at Sheepshead Bay Speedway on September 22, drove his Frontenac at an average speed of over 110 miles an hour. The enormous frictional resistance set up by this tremendous speed for such a protracted period is the chief cause of worry on the part of a successful racing driver and must be eliminated by proper lubrication if he intends to be the winner. Chevrolet, as many of the other Speedway stars, used Dixon's Graphite automobile lubricants. He met with no trouble due to excessive friction and made a non-stop run of 100 miles.

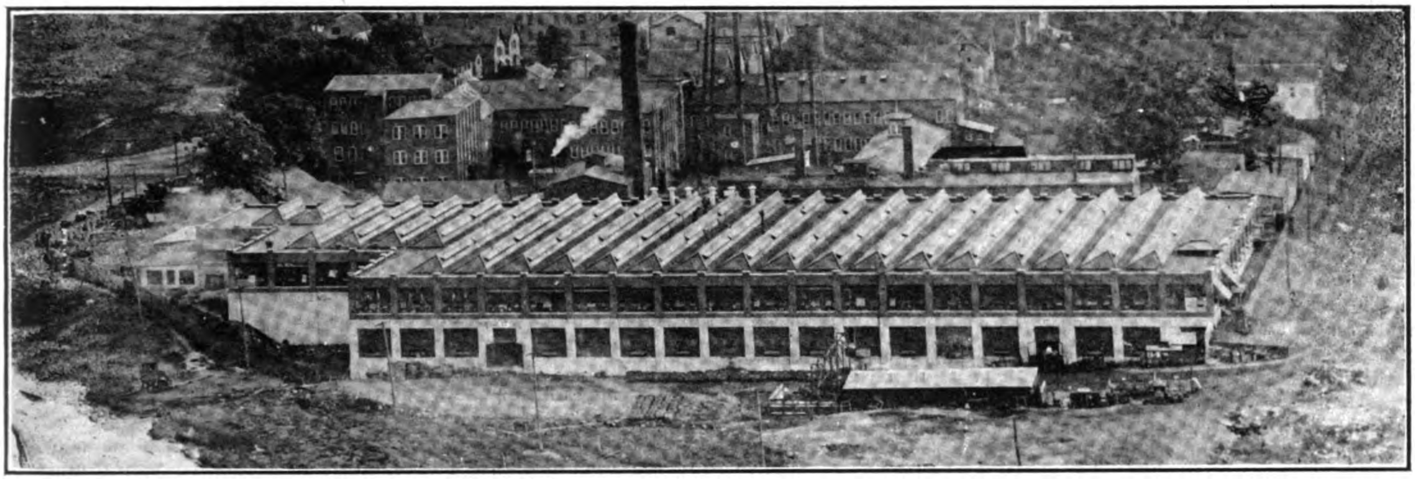
### DAYTON RUBBER MANUFACTURING CO. SELLING PLAN.

R. L. De Voe, general sales manager of the Dayton Rubber Manufacturing Co., has announced the company's selling campaign for 1918, which will include a very extensive national advertising campaign, covering all national periodicals, farm papers and a large list of trade papers. The company has been gradually augmenting its sales force and with the opening of three new branches next month will employ 50 or more additional salesmen for the coming season.

### J. H. LEMMON JOINS STERLING.

John H. Lemmon, formerly with the Watrous-Esty Advertising Co., and more recently with the Nichols Finn Advertising Co., has been appointed advertising manager of the Sterling Motor Truck Co., Milwaukee, Wis.

# *Marlin-Rockwell Corp. Plants Making Parts*



**Marlin Arms Plant of the Marlin-Rockwell Corporation, New Haven, Conn.**

THE Marlin-Rockwell Corporation, a munitions giant in the great field of American industries, is an extensive enterprise, composed in large part of units ordinarily engaged in making a line of parts for automobiles and other motor vehicles. It is an enterprise quite distinct in its make-up from all other concerns producing bearings, wheels and radiators for automobiles, and presents an interesting study from the fact that in times of war it has prepared complete plans for the activities of peace.

The units composing the Marlin-Rockwell Corporation are the Marlin Arms plant in New Haven, Conn.; the Mayo Radiator plant in the same city, the Rockwell-Drake bearings and machinery plant in Plainville, Conn., and the Standard Roller Bearings plant in Philadelphia.

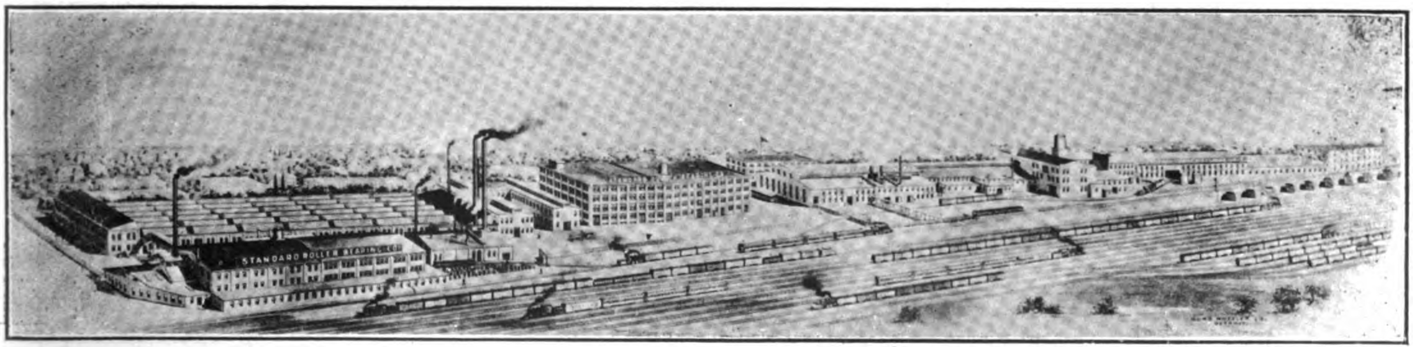
The purchase of the former Marlin Arms Co. at New Haven, Conn., served as a nucleus around which to develop constituent companies by the acquisition of established industries or units, notably in automobile parts, such as ball and roller bearings, steel balls and radiators. In a recent announcement of the policies of the new company it was stressed as an important fact that the products of the constituent companies are so substantial in quantity and excellent in quality that they will constitute the foundation of the business.

Additional significance is loaned to this undertaking by the fact that these various products are used in a multitude of industries outside of automobile manufacture (which is served in all its branches of passenger cars, commercial cars and trucks), including farm tractors, aeroplanes, motorcycles and all machinery or devices using ball bearings or steel balls.

The Marlin-Rockwell Corporation is young in the fact that it was founded less than two years ago—in December, 1915—to be exact—but it is old in the sense that three in four of its components are manufacturing units which have been established for long periods of years, that its officers and executives have been identified with manufacturing in these lines for long periods and have experience both in production and distributing. Besides this they know the fine mechanical requirements and quality demands of the motorists and the vehicle industries of America. With keen appreciation of the fact that high grade bearings are one of the leading essentials of all modern machines and a superlative requirement in those which traverse the highways of the land either on ordinary roadways or on steel tracks, the company took steps to include their production within its widening scope.

For this reason, as one of the most important links in their chain of large manufacturing establishments they acquired the assets of the Standard Roller Bearing Co. of Philadelphia. This plant occupies ground a half a mile in length, with an area of half a million square feet, adjoining the tracks of the Pennsylvania railroad. There the company manufactures "S. R. B." maximum type annular ball bearings, improved type taper roller bearings, steel balls and Rudge-Whitworth wire wheels, and their several products, it is maintained, after passing through a series of highly specialized processes, reach the highest grade and accuracy ever attained in products of this kind. Owing to the well developed sales organization of the Standard Roller Bearing Co., it directs the sales of the constituent companies, with the exception of the Marlin Arms division.

Of extreme mechanical interest in this plant are the activities of the steel ball division, in which, by numerous careful and painstaking processes the production proceeds from the rough steel rod to the finished ball. The steel is made from a special formula evolved in the company's metallurgical department after patient and exhaustive experimentation. It is a chrome alloy steel, which is wear resisting, tough, strong and of a uniform degree of hardness. The steel ball plant is a highly specialized manufacturing organization,



**Buildings of the Standard Roller Bearing Co., Philadelphia, Pa., Occupying Ground Covering Half a Million Square Feet.**

New Buildings at Rockwell-Drake Plant, Plainville, Conn.

in many departments equipped with special automatic machines designed and built expressly for the work of this company.

The uniformity of size is vital to the efficiency of a ball in a bearing. The "S. R. B." chrome alloy steel balls are made in various standard sizes, but because it is impossible to make hard steel balls of absolutely identical mean diameter as they come from the polishing process, a batch of any standard size balls will show various microscopic deviations from the standard size (⅝ for instance). They are, therefore, subjected to a gauging test which automatically discards from use those in excess of four ten-thousandths above or below the standard ⅝ size, and separates those within these limits of tolerance into nine groups by their ten-thousandths of an inch in size. It is effected by making the balls run continuously but slowly along an inclined plane with 10 holes, each one-tenth of an inch wider in diameter than the one above it, and under each hole a runway leading to a separate pan. The top hole receives all those below the limit of tolerance, the second is .0004 minus, the last is .0004 plus, and all larger than that are above the limit of tolerance and are discharged through a channel at the end of the gauge. The groups are separated into cardboard boxes all labeled as ⅝ balls, but also designating their degree of deviation thus: ⅝—.0003 of ⅝+.0002 and so forth. In filling a bearing the balls of that bearing are all taken from one box and are thus uniform.

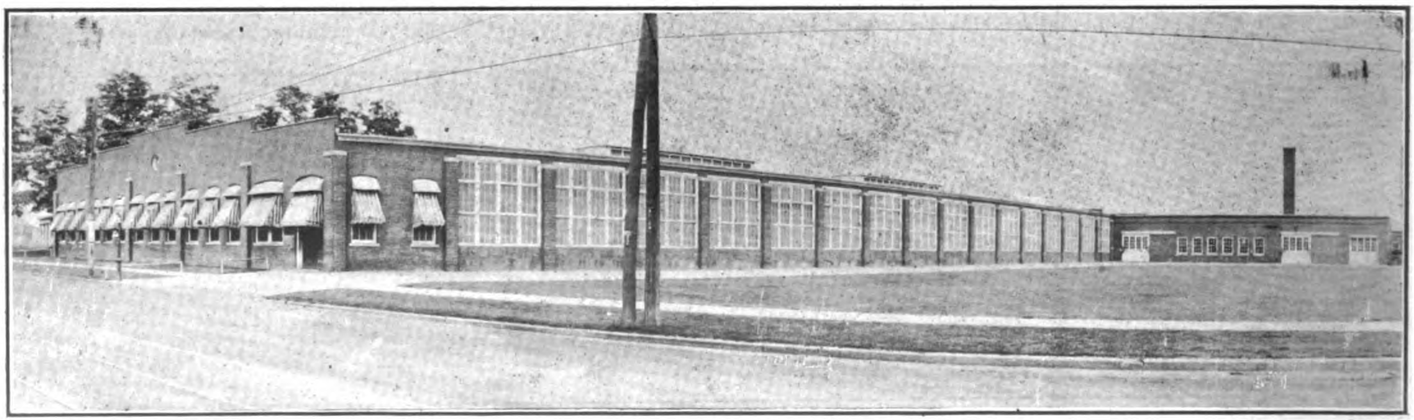
In roller bearings this company is now manufacturing a taper unit in accordance with a new scheme of construction as regards the shape of the cone and roller, presenting an effective bearing surface over their entire length and therefore, it is asserted, supplying a maximum radial load capacity for a given length of bearing.

Operating in conjunction with the other units the Rockwell-Drake Corporation is engaged at Plainville, Conn., in the manufacture of ball bearings of improved types, and of machinery for the manufacture of ball bearings. The property occupied is about 10 acres in extent, the works have 13,000 feet of floor space and the plant has a full modern equipment. In the policy of expansion of the directing company improvements are under way there at the present time. The main building is 130 feet long by 100 feet wide, and is being extended to make it 250 feet long by 100 feet wide, with an ell which is 130x100 feet in dimensions. The small building at the Plainville plant is 75x50 feet and is to be enlarged so that it will be 225 feet long by 50 feet wide. This plant was established in November, 1915, by H. M. Rockwell of the Marlin-Rockwell Corporation, and Leon Drake, who is now works manager at the Mayo Radiator, and it became a part of the Marlin-Rockwell Corporation in March of this year.

The Mayo radiator for automobiles and motor trucks is the sole product of the unit of the Marlin-Rockwell Corporation at New Haven, which, as the Mayo Radiator Co., was incorporated in 1905. The property has an area of more than 350,000 square feet, allowing ample room for expansion, and the production activities are housed in a one-story building 365x100 feet, with an ell which is 150x40 feet.

The plant is equipped with machines of improved design for the various operations. The radiator is of the "honeycomb" type and is made in various sizes to suit the numerous high-grade automobiles for which it is the standard equipment. The radiator sections are built up from flanged strips of brass or German silver of required width from a roll of sheet metal spooled on a mandril from which it is automatically fed to a machine which, at right intervals, bends and close crimps the metal into double thick flanges. As the end of the flanged metal strip reaches a certain gauge pin an attendant cuts off a length which represents one length of the 10 or more which make up the radiator section. The lengths, lightly tipped with solder to hold them together, are assembled into a section of the radiator and placed in a frame, which is tightened until it is in proper binding to be soldered together at one tip in a solder bath.

Referring briefly to the Marlin Arms unit, a marvel of industrial interest and efficiency, which constitutes the initial unit of this corporation, the spirit of the whole enterprise is shown. In its specialty of machine guns the Marlin Arms has created an enormous capacity, representing, it is asserted, probably two-thirds of the world's production. The plant as it stood when the Marlin Arms Corporation was organized after the purchase of the Marlin Arms Co. in December, 1915, was in no degree equipped for this quantity production. The organization was made under the leadership of Mr. A. F. Rockwell of Bristol, Conn., a manufacturer of successful record, associated with Mr. Edgar A. Park, skilled in the organization of large enterprises; Mr. Louis E. Stoddard, financier and capitalist, and some others, to engage in the manufacture of machine guns, primarily on the basis of a large contract with the Russian government. The gathering of thousands of skilled mechanics was a monumental achievement in the existing economy; the varied processes and mechanical perfections make a wonderful theme of industrial progress in war times which cannot here be detailed because of space limits. The Marlin plant now works on an extensive order for the United States government. After war demands are at an end the plant will continue on a better and more efficient scale the manufacture of Marlin repeating rifles, shot guns, etc., for which the original Marlin plant has an old and well sustained reputation. The plant, closely built, occupies ground 600x600 feet in area and uses 150,000 square feet of floor space.



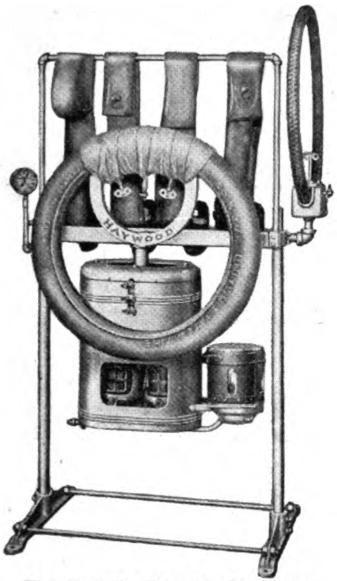
Mayo Radiator Plant, New Haven, Conn., Producing Automobile and Truck Radiators Under the Marlin-Rockwell Corp.

# Stimulating Dealers' Tire Repair Service

Out of the prevailing high prices for new automobile tires has arisen a demand for repair service that at this time is particularly welcomed by the garage men. Although many garages have always done more or less tube and tire repairing, extensive repairing of bad blow outs, rim cuts and the like was not gone into.

The average car owner who at one time would rather have thrown away his old tires and bought new ones, than to have had them repaired or vulcanized, sees an opportunity to save money in present day tire repairing methods. For this reason the progressive garage men have added a tire repairing department to their business and the popularity of the service with the car owner bids fair to make it a permanent and profitable institution.

It develops that with proper equipment and common sense methods of doing the work the profits from the repair work can be made to exceed those of the sales on new tires, without involving such a large investment, and at the same time this department also brings in a great number of new customers that otherwise would go to competitors.



Haywood's D-B Vulcanizer.

But a short time of training and practise is necessary to enable one to master the details of the work and quite frequently during dull seasons the workman can be used in other departments of the business. By this means there is very little additional overhead expense incurred in installing a tire repair plant.

These facts have been lately called to attention by the Haywood Tire and Equipment Co. (manufacturers of Haywood tire repair plants), who conduct an experimental and instructing laboratory at Indianapolis, Ind. In this department they co-operate with the purchasers of Haywood plans to the extent of giving them a free course of instruction in tire repairing either at the shop or by a written set of instructions.

The Haywood concern is specializing on repair plants for garages and auto service stations. The accompanying illustrations show two popular models that appeal to garage men. The smaller of the two, the Haywood model D-B, is a compactly built vulcanizing plant, occupying a very small place, yet handling a very remarkable range of work.

One of the advantageous features of this plant lies in the fact that it is very simple to operate and the methods used in making repairs on it are such that any one can make a success of the work with but very little practise.

This plant is designed to take care of practically any popular sized automobile or motorcycle tire of any type, as well as tube repairs. It is a steam vulcanizer, heated with a double kerosene burner. The boiler, which is made of extra heavy iron, contains seven quarts of water, and when heated it may be maintained at constant pressure with little or no attention. The system is fitted with a pressure gauge, a safety valve and curing plate for four or five tubes. In addition to this is a shoe curing mold and a bicycle mold.

The Haywood model L is a complete tire repairing or vulcanizing plant, with which all of the sectional casing repair work and inner tube repairing incident to the operation of a garage or a tire repair shop may be handled.

The illustration of the model L with the tires in curing position demonstrates the remarkable range and capacity of this machine. Five tires can be cured or vulcanized at one time. They may range in size from a 28 by 2½ inch motorcycle up to and including a large 37 by five-inch automobile tire.

The large three cavity vulcanizer directly above the boiler cures full 15-inch sections from bead to bead at one heat, and it is said that work to the value of $75 can be put through this model per day without taxing its capacity.

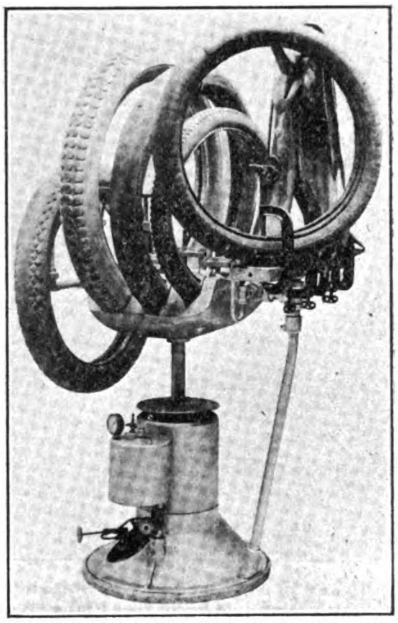
It is equipped with a 24-inch tube plate which will handle four or five inner tubes at one time, and also an inside curing mold for taking care of relining and inside curing.

The machine is operated by steam, which is generated by either gas or gasoline burner and is claimed to be absolutely safe. With the outfit comes a complete set of tools and necessary parts for its operation.

A space 10 feet square provides ample room for the operation of the plant.

Either of these plants are said to be exceptionally adaptable to the needs of the garage man or those who desire to take advantage of the possibilities in the repairing of automobile tires.

The Haywood Tire and Equipment Co. of 809 N. Capitol avenue, Indianapolis, Ind., will send catalogues describing these plants in detail to any of the readers of the Accessory and Garage Journal upon request.



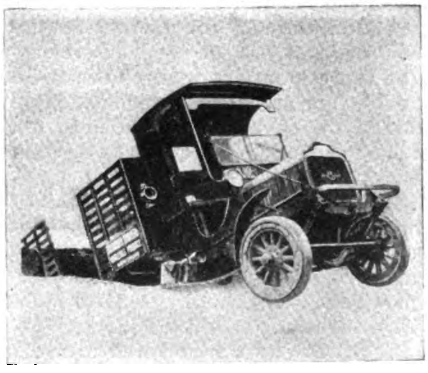
Haywood Model L Tire Repairing and Vulcanizing Plant.

## FREE SCHOOL TO TEACH WOMEN TO OPERATE CARS.

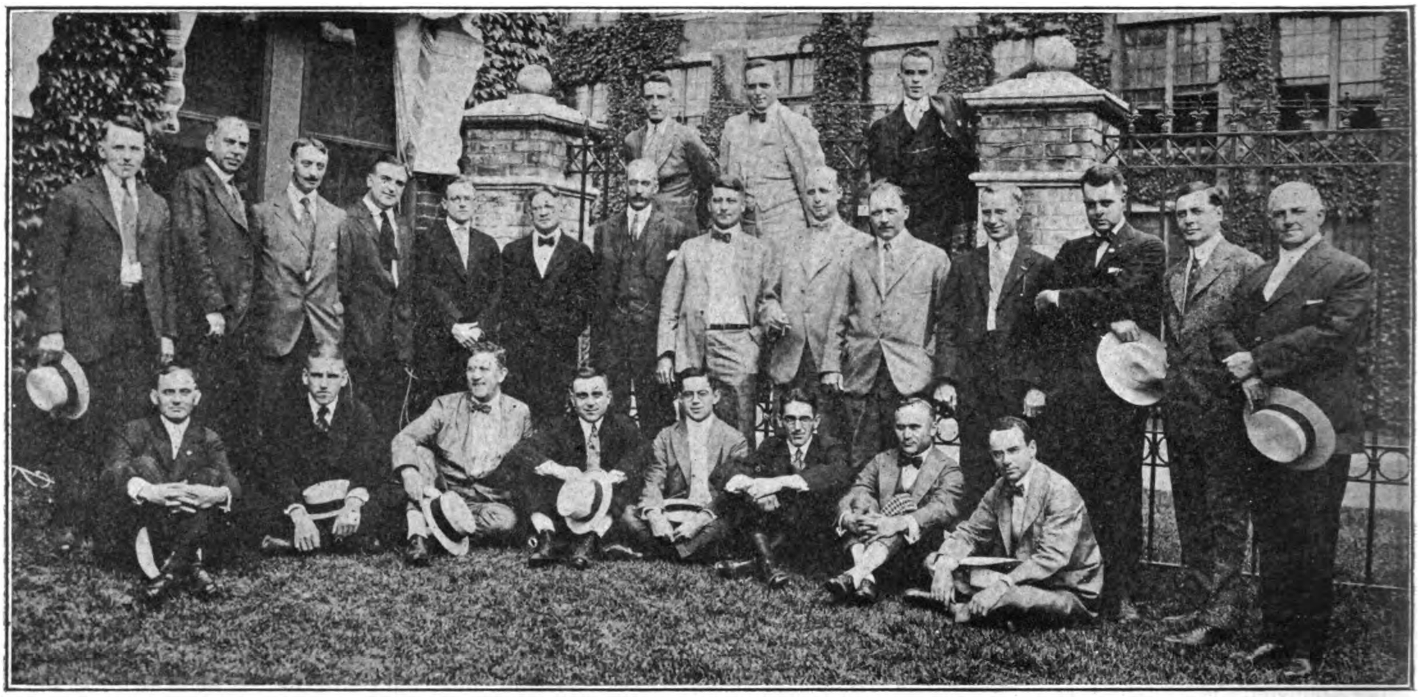
Harry Newman, Inc., Kissel Kar agents at St. Louis, have opened a free school for the instruction of women in the art of repairing and operating automobiles.

## ACCIDENTS TEST SPRINGS.

While on the road to Chicago with a load of over three tons of potatoes, the truck in the picture went over a strip of pavement that had been undermined by a defective sewer. The truck fell through the pavement and dropped to a point several feet below the street level. It is interesting to note that despite the terrific strain the springs, which were Tuthill Titanics, made by the Tuthill Spring Co. of 760 Polk street, Chicago, Ill., withstood the drop and have given thousands of miles of service since the accident. Tuthill Titanic springs have no centre bolt, but instead a patented arch at the centre, which is held in a vise like grip by a yoke and plate fastened to the outside of the spring.



Delivery Vehicle's Drop Through Hole in Chicago Pavement.



Group of Standard Woven Fabric Co. Sales and Branch Managers at the Convention Recently Held at Company's Plant, Walpole, Mass., Where the Plans Were Gone Over Introducing Stanwal Brake Lining to the Trade. Those in the Picture: Bottom Row, Left to Right, H. F. Marquardt, C. K. Everett, T. J. Daley, F. W. Dilger, C. O. Anthony, R. D. Northrop, D. Hollingsworth, H. Tipper. Middle Row, Left to Right, E. O. Christiansen, M. D. Daives, T. Howard, J. C. Donnelly, H. E. Fannon, R. Everett, S. Bell, M. Voorhees, D. E. Bailey, F. J. Gleason, M. J. Cornelius, T. Lamb, W. H. Williams, C. W. Blackman. Top Row, Left to Right, P. Gardiner, F. V. McGraw, W. J. Mahoney.

# Activities of Prominent Men of the Industry

## Resignations, Promotions and Other News of the Personnel of Motor Vehicle Manufacturing and Merchandising Companies and Allied Businesses

**Stoughton Bell,** president of the Standard Woven Fabric Co., presided over the meetings of the field representatives and branch managers held recently at Walpole, Mass., where the plant and headquarters of the company is located. The sales conference was attended by men from Denver, Seattle, San Francisco and other leading distributing centres of the country.

A four days' session was held, during which discussions of sales problems and plans of distribution for Stanwal products occupied most of the time. A tour of inspection through the factory was made on the first day of the conference and the representatives were shown the manufacturing process in producing Stanwal brake lining, which is the most recent achievement of the company's engineering staff. Tests were conducted for the special benefit of the salesmen and they were also given the results of a number of road tests. A review of the activities and progress of the company during the past year was given by General Manager F. J. Gleason.

A whole day was devoted to a discussion of the sales and advertising plans for the introduction of Stanwal. Richard Everett, sales manager, outlined the plans which had been formulated, and R. D. Northrop of the Greenleaf Co., who is in charge of the advertising, also addressed the men. President Bell entertained the men at his home in Duxbury on the last day of the conference. A clambake was served and a baseball game played between Democrats and Republicans. T. J. Daley, Detroit manager, was captain of the Democrats, and William Lowell Putnam of Boston, a director of the company, led the Republicans.

Frank A. Kapp, Recently Appointed Advertising Manager of the Mitchell Motor Co., Inc., Racine, Wis.

**Frank A. Kapp** has been appointed advertising manager of the Mitchell Motor Co.. Inc., Racine, Wis. He was formerly associated with the advertising clubs as vice president of the central division. Mr. Kapp has been a director of the Toledo Advertising Club for a number of years.

**E. B. Smith** has been appointed sales manager of the Commerce Motor Co., Muskogee, Okla. Mr. Smith has been in the automobile business for a number of years, having formerly handled Studebaker cars in Atlanta, Ga.

**E. M. Greene** has been appointed Minneapolis zone supervisor for the Maxwell Motor Sales Corp. He was at one time supervisor at Cleveland and later at Boston.

**W. A. McDonald** is now general manager of the Sweeten-Wilmington Co., Wilmington, Del. He was for four years sales manager for the Hupp Motor Co. Mr. McDonald succeeds H. F. Dun, who has joined the army.

**H. A. Haviland,** formerly in charge of the Splitdorf Electrical Co., Newark, N. J., has been appointed manager of the southwestern territory. His headquarters will be at Dallas, Tex.

**W. E. Harding** has joined the sales force of the Packard Motor Car Co. of New York. He resigned from the position of sales manager for the Pathfinder Automobile Co. of New York. Mr. Harding is an old timer in the automobile business and has been connected with the Ford, Chalmers and Mitchell lines, in addition to that of the Pathfinder.

**R. S. Ashby**, well known to the tire industry of Chicago, having been associated with the Republic company for six years, has been appointed manager of the tire department of the Chicago branch of the Empire Rubber and Tire Co.

**R. T. Yeats** has been appointed director of sales and exports for the Detroiter Motor Car Co. He has been on the staff of the company since it was founded.

**J. F. Bowman**, formerly sales manager of the Federal Motor Truck Co., has been appointed director of sales and elected vice president of the Acason Motor Truck Co.

**F. E. Woodell**, manager for the General Motors Export Co., in Australia, is here on a visit in regard to business. He will return to Sidney from New York via San Francisco.

W. O. Allen, President of New Turnbull Motor Truck Co., Defiance, O., and Treasurer and General Manager of the Allen Motor Car Co., Fostoria, O.

**W. O. Allen**, general manager of the Allen Motor Car Co., Fostoria, O., has organized the Turnbull Motor Truck and Wagon Co. at Defiance, O., and will engage in the manufacture of a 1½-ton truck. The company is capitalized at $1,000,000 and over $300,000 of the amount has already been subscribed. The new enterprise will get underway rapidly as manufacturing operations will be conducted in the big plant of the Turnbull Wagon Co. at Defiance.

**Willard S. French** has been appointed a director of sales for the Monarch Governor Co., Detroit, Mich. Mr. French comes from the C. S. Von Poettgen Advertising Agency. His past experience, both in sales and advertising, not only convinced him of the tremendous field for a governor for commercial vehicles, but of the merit of the Monarch governor in particular. His activities has taken him from coast to coast and he has established a splendid reputation for the manner in which he handles sales problems.

**W. J. Drumpelman** has resigned as assistant sales manager of the Chalmers Motor Co. to become assistant general manager of the Elgin Motor Car Corp. Mr. Drumpelman has already assumed charge of his new duties. He entered the automobile business in 1910 as a dealer in Dover, N. J., and in 1911 he organized the W. C. D. Motor Car Co. of Newark as northern New Jersey distributor for several well known makes of cars. Mr. Drumpelman sold out his interest in this company in 1913 to join the Lozier Motor Co., for whom he was central district manager in Chicago, in charge of the territory from that city to the coast. His next connection was with the Olds Motor Works as special representative for J. V. Hall. In 1915 he joined the Chalmers Motor Co. as eastern district representative. He was promoted to assistant general sales manager in July, 1916, relinquishing that title to accept the broader opportunity offered by the Elgin corporation.

**John B. Rauen** has severed his connection with the Cambria Spring Co. as manager and has organized the United States Spring Co., Inc., with Philip Riedele and Herbert Anthons. The new incorporation purchased the plant of the A. F. Spring Co. and is having it remodeled.

**William B. Stout** has resigned his duties as manager of the aircraft division of the Packard Motor Car Co. to go into aircraft work for the government in Washington.

**G. W. D. Donnelly**, St. Louis, has been made sales manager for the Weber Co. He has been for several years with the Overland Automobile Co.

**H. S. Moore** has been appointed sales manager of the Wallace C. Hood Service Bureau, Detroit. He was formerly with the Standard Detroit Tractor Co.

**Lake P. Jones** has been promoted to be manager of the school for salesmen of the Goodyear company at Akron, O. He was formerly with the St. Louis branch of the company.

**C. H. Eaton** has been elected president of the Kalamazoo Spring and Axle Co., Kalamazoo, Mich. F. V. Wicks is treasurer and J. S. Clary secretary.

**W. I. Ballentine**, Milwaukee, Wis., has accepted the position of vice president and general superintendent of the Advance-Rumely Co., tractor engine maker, Laporte, Ind. He was formerly superintendent of the Chain Belt Co.

W. J. Drumpelman, Formerly of the Chalmers Staff, Now Assistant General Manager of the Elgin Motor Car Corp., Chicago, Ill.

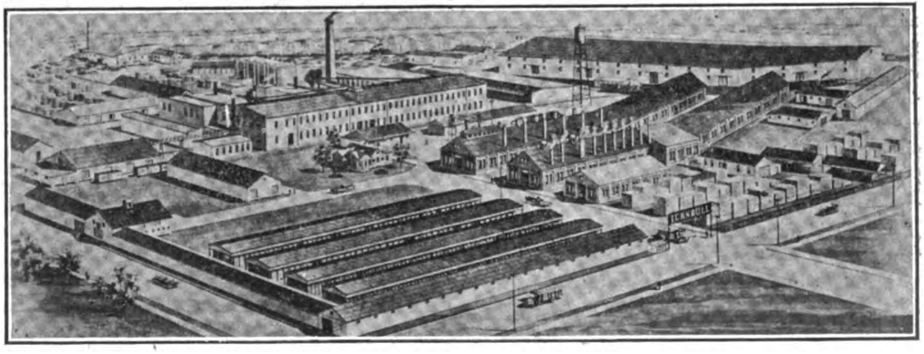
**E. W. Goodwin**, the well known body designer, has been appointed engineer of the body division of the Cadillac Motor Car Co., Detroit, Mich. For the past 18 months Mr. Goodwin has been in charge of the body division of the Chalmers Motor Co. He took up his new duties on Aug. 20.

**Hoover Holton**, formerly eastern zone manager of the Maxwell Motor Co., has been appointed district sales manager of the White Co., Cleveland, O.

**Herbert A. Minturn** has been appointed engineer of the Pilot Motor Car Co., Richmond, Ind. He was formerly engineer and factory manager of the Sun Motor Car Co., Elkhart, Ind.

**J. C. Austin** has established headquarters in Detroit for the Tubular Rivet and Stud Co., Boston, and will handle their products in Ohio, Michigan and Northern Indiana. Mr. Austin was assistant chief engineer of the Studebaker Corp. for two years.

**Arthur Asa Hill**, editor of the Automobile Dealer and Repairer and the Blacksmith and Wheelwright, died at his home in New York City on Sept. 13. Mr. Hill was a native of Sandwich, Mass. He was one of the original members of the New York Press Club and formerly owned and edited the Haverhill (Mass.) Gazette and later the North Adams (Mass.) Evening Herald.



Plant of the Turnbull Motor Truck and Wagon Co., Defiance, O., Where Turnbull Wagons Have Been Made for 41 Years.

**Frank M. Eldredge**, secretary and treasurer of the Wallace C. Hood Service Bureau, Detroit, Mich., has purchased the interests in the company held by L. W. Swords.

Frank M. Eldredge, Secretary and Treasurer of the Wallace C. Hood Service Bureau, Detroit, Mich.

**William Blessing** has been appointed manager of the Bell Motor Car Co., York, Pa. He was formerly manager of service for the Pullman Motor Car Co.

**J. M. Eaton** has become associated with Henry M. Leland in the manufacture of U. S. A. airplane engines. He was formerly head of the welfare department of the Cadillac Motor Car Co.

**T. J. Wetzel** has been elected president of the Wetzel-Hall Co., manufacturers' agents at New York and Detroit. Charles M. Hall has sold his interests in the company and has resigned. Don M. Coffman has been elected vice president and A. M. Gent secretary and treasurer.

**G. E. Strohm** is now division manager of the Prest-O-Lite Co., Detroit branch, succeeding T. A. Flaherty, who has joined the Officers Training Camp, Fort Benjamin Harrison.

**T. H. Newberry** has been commissioned a lieutenant commander of the navy. He is one of the directors and founders of the Packard Motor Car Co.

**Nelson W. Hodge** has become associated with the General Bronze Foundry Co., Cleveland, as manager of its two plants. He was formerly with the Aluminum Casting Co. W. E. Weaver has been elected president of the General Bronze Foundry Co. He was formerly manager.

**C. W. Butterfield** has taken the position of H. D. Wilson as sales manager of the Dyneto Electric Corp., Syracuse, N. Y.

**C. E. Salisbury** has succeeded J. L. Kenyon as service manager of the Hupp Motor Car Corp. Mr. Salisbury was assistant service manager. Mr. Kenyon has joined the forces of the General Motors Corp.

**C. W. Stiger** has been appointed a member of the motor truck committee of the War Industries board. He is president of the Motor and Accessory Manufacturers, Inc.

**John Schram** has joined the factory forces of the White Co., Cleveland, O. He was formerly factory representative of the United States Motor Truck Co. in the northwestern Ohio district. His headquarters for the present will be in Toledo, where he will be in touch with the White Motor Sales Co.

**Guy Core** is now associated with the Briscoe Motor Corp., Jackson, Mich., as advertising manager. He succeeds Robert T. Walsh, who resigned as director of advertising. Mr. Core was formerly identified with the Redden Motor Truck Co. in the capacity as advertising manager and previous to that he had charge of the publicity of the Springfield Body Co.

**Andrew Langenbacher** has been appointed sales manager of the Duplex Truck Co., Lansing, Mich. He was formerly in charge of exports and divisional sales for the Reo Motor Car Co. With the production facilities in the Duplex factory it is expected next year the sales will reach a total of $12,000,000.

**Benton G. L. Dodge**, former advertising and publicity manager of the Standard Parts Co., has resumed his former activities after a period devoted to sales promotion work. He succeeds J. A. Braden, who recently retired on account of ill health.

**R. J. Laciar**, formerly manager of sales in New Jersey, has been appointed manager of sales for the Fulton Motor Truck Co., Farmingdale, L. I., N. Y.

**Charles Gould** has resigned from the Maxwell Motor Car Co. He has been with the Maxwell company since 1913. It is his intention to take up government work in connection with the war.

**W. W. Burke** has been appointed sales manager of the electric starter division of the American Ever Ready Works, Long Island City, and will have charge of the marketing of their new starting and lighting equipment for Ford cars. He was formerly eastern sales manager for Gray & Davis, Inc., Boston, Mass.

**E. L. Lindroth**, formerly connected with the Philadelphia branch of the Chase Motor Truck Co., has joined the staff of the Richards Kelly Co., which has taken over the Chase agency.

**Alonzo P. Ewing** has resigned as vice president of the Highland Park State Bank of Detroit to become associated with the Michigan Copper and Brass Co. in an executive position.

**George S. Morrow** is now again with the Saxon Motor Co., New York, eastern distributor for the Detroit company. He has just returned from a vacation trip. He visited the Pacific coast.

**A. R. Goodman** has been appointed special district manager for the New England territory of the Olympian Motors Co., Pontiac, Mich. He was formerly with the Scripps-Booth Motor Co., Detroit.

**D. F. Whittaker**, formerly assistant advertising manager of the Federal Motor Truck Co., has become advertising manager of the Detroit Truck Co., Detroit, Mich. H. E. Pierce, for nearly 10 years purchasing agent of the Regal Motor Car Co., will direct the purchases of the company.

**Otto A. Lawton** has been elected treasurer and director of the Bela Body Co., Amesbury, Mass. He is a director of the H. H. Franklin Manufacturing Co., Syracuse, N. Y.

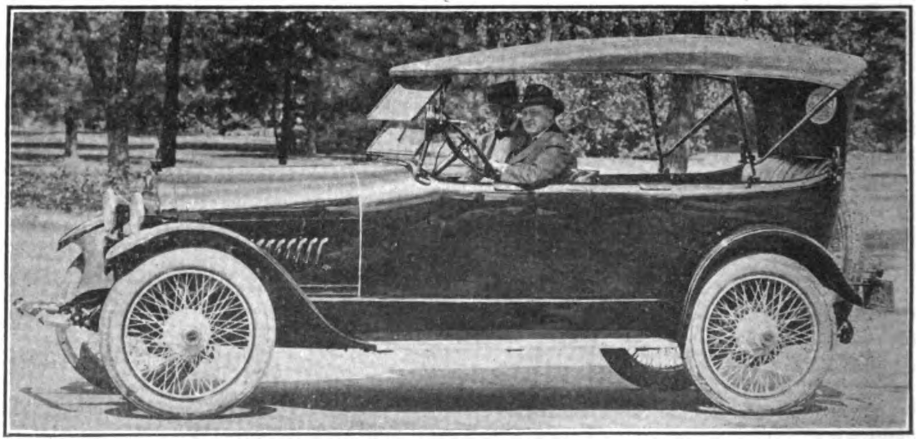
**George C. Van Veen**, formerly manager of the Kansas City branch of the Mason Tire and Rubber Co., has been appointed manager of the new Chicago factory branch.

**B. H. Anibel** has been promoted to chief engineer of the Cadillac Motor Car Co., Detroit. He was formerly designing engineer.

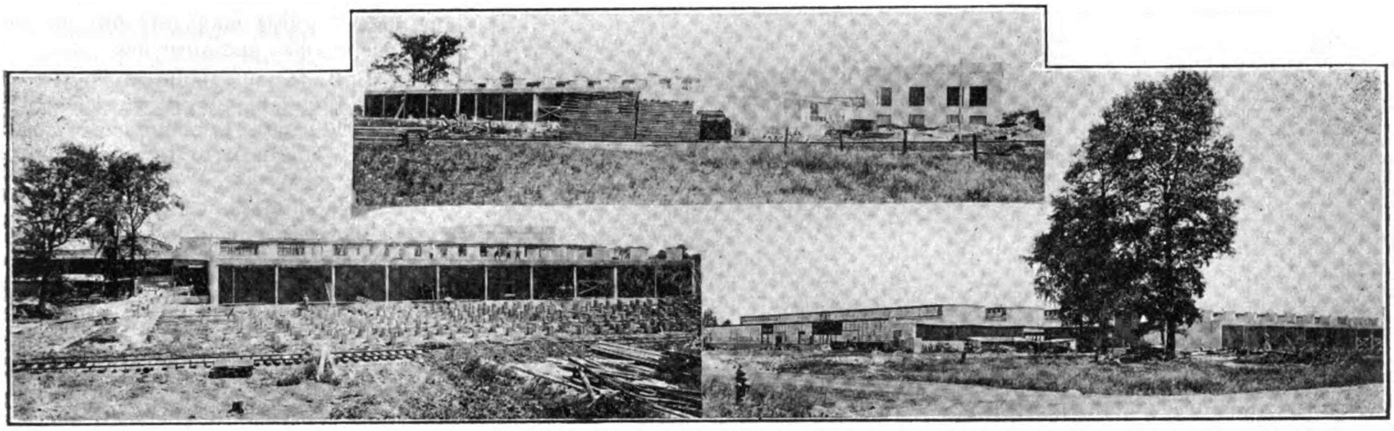
**W. B. Hauger** has purchased an interest in the Murphy Machine and Equipment Co. of Memphis, Tenn. He was formerly southern sales representative for the Inter-State Motor Co. of Muncie, Ind. This concern has been distributing Inter-State and Premier cars for the past two years.

**B. W. Twyman**, general manager of the Inter-State Motor Co., Muncie, Ind., has returned from an extended business trip through the East.

**George H. Dreher** has joined the Hiland Automobile Co., Pittsburgh, Pa., where he will specialize in the sale of Dodge Brothers motor cars. He was formerly manager of the Smith Form-a-Truck Sales Co.



H. J. Diekman, Vice President and General Manager of the H. Barcroft White Corporation, Syracuse, N. Y., in His Jeffery Six. R. M. Schiele, Assistant Sales Manager, at the Right.



Three Views of the New Addition to the Plant of the C. R. Wilson Body Co., Bay City, Mich., a Spacious and Modernly Equipped Daylight Woodworking Factory.

# *HAPPENINGS AMONG THE CAR AND PARTS MAKERS*

## What Several of the Leading Manufacturers in the Motor Vehicle Industry and Allied Lines Are Doing or Have Under Consideration

**The C. R. Wilson Body Co.** commences manufacturing operations in its new wood working plant at Bay City, Mich., this month. The buildings comprising the plant are being specially equipped and it is considered one of the best and most complete of its kind in the world.

**The Gas Motor Efficiency Co.**, Janesville, Wis., has doubled its output by the addition of a full night force. The company manufactures spark plugs and other ignition specialties. The production of spark plugs has reached 1250 a day.

**The Torbensen Axle Co.**, Cleveland, O., is erecting a two-story building, 140 by 110 feet. It will cost $200,000 and is to be used exclusively for the production of 3½ and five-ton axles. The company in addition to this is installing a heat treating plant and a power station capable of generating 600 horsepower.

**The Dayton Engineering Laboratories Co.**, Dayton, O., manufacturer of the Delco systems, has installed a special department devoted to tractor ignition problems. Experiments are now being made.

**The Briggs & Stratton Co.**, Milwaukee, Wis., is now employing women to fill the vacancies caused by the men. These positions formerly were exclusively occupied by the men. The company has already employed 200 women and are makers of coils, magnetos, switches and other electrical devices.

**The Universal Manufacturing Co.**, Racine, Wis., has changed its name to the Lorenz Motors Co. and in addition to manufacturing steering gears, will turn out engines, trucks, passenger cars, tractors, traction engines, ships, munitions of war, weapons, airplanes and specialties.

**The Heil Co.**, Milwaukee, Wis., is building additions to its plant which will make it one of the largest makers of motor dump truck bodies in the world. The main addition will be a steel and brick shop, 130 by 200 feet, equipped with electric welding machinery, a three-ton and a five-ton electric crane to cost about $100,000 complete. This shop will be devoted exclusively to the production of motor truck bodies by the electric welding process.

**The Monitor Motor Car Co.**, Columbus, O., will build a factory on 25 acres of land which the company recently bought. The capital was recently increased to $1,000,000. The plans are for two one-story brick structures, each to have 100,000 square feet of floor space.

**The Minerva Motors Co., Ltd.**, Amsterdam, Holland, has adopted Pierce governors made by the Pierce Governor Co., Anderson, Ind., as a standard equipment on its motor trucks and lorries. The Minerva Motors Co. is among the largest and best known motor manufacturers in Europe. The company will require about 5000 governors during the next 12 months.

**The Four-Wheel-Drive Auto Co.**, Clintonville, Wis., is increasing the floor space by the building of additions to its plant. The floor space will then amount to approximately 12,000 square feet. The receiving stock and shipping department will be in the new building, 100 by 120 feet. A new heat treating room 60 by 64 feet is being erected to the motor testing shop and the third new structure, 100 by 180 feet, will be used for finishing and storage of completed trucks.

**The Standard Steel Castings Co.**, Cleveland, O., is erecting a new foundry and machine shop for the manufacture of cast steel wheels. It will cost about $350,000 and the melting equipment will include two three-ton electric furnaces and three two-ton convertors. The output of the new foundry will be 400 wheels a day. The capitalization has been increased to $1,000,000 from $125,000.

**The Victor Wire Wheel Co.**, Kalamazoo, Mich., has leased the plant formerly occupied by the Gibson Manufacturing Co. to be used for manufacturing wire wheels until the company can erect its own factory.

**Fageol Motors Co.**, San Francisco, Cal., has completed the first unit of its new plant and will start the manufacture of Fageol passenger cars, trucks and tractors. The plant is equipped with the newest and latest manufacturing devices.

**West Bend Aluminum Co.**, West Bend, Wis., has been awarded contracts for new buildings and factory additions costing about $50,000. The main improvement will be an L shaped factory, 70 by 190 feet, three stories high.

**Steiner Manufacturing Co.**, Plymouth, Wis., has changed its name to Plymouth Motor Manufacturing Co., and will enlarge its line of products. The company are makers of stationary and portable gasoline engines.

**The Rotary Tire and Rubber Co.**, Zanesville, O., is planning the construction of a factory to cost $500,000.

**The Geronimo Motor Co.** expects to occupy its new plant about Oct. 1. The company was organized last October in Enid, Okla. The company plans to produce 2500 passenger cars and a like number of tractors during the first year.

**A. R. Mosler & Co.**, New York, N. Y., has received a large government order for mica core spark plugs. The order is for plugs to supply the American expeditionary forces in France, for use on trucks, passenger cars, tractors and motorcycles. The company will supply the entire plug requirements to the American army abroad.

**C. A. Shaler Co.**, Waupun, Wis., has purchased additional acreage and is to build a new warehouse and shipping department. This was made necessary on account of the increased demand for its products. The company plans to build several new structures this fall.

**Grand Rapids School Equipment Co.**, Grand Rapids, Mich., will begin operations on its recent government order for 6500 motor truck bodies. The first delivery is planned for December and 160

**First Unit of the New Plant of the Fageol Motors Co., San Francisco, Cal., Which Will Build Passenger Cars, Trucks and Tractors.**

cars of oak, ash, southern pine and gum lumber are now being assembled. The company expects, when fully settled, to turn out 1000 bodies a month.

**Convertible Tractor Corp.**, St. Paul, Minn., is now located in its new factory at 1485-1489 Marshall avenue. In the near future a larger building will be added and then a complete tractor will be put on the market. The Me-Go convertible tractor attachment is now being produced and sells for $250.

**The Prest-O-Lite Co., Inc.**, Indianapolis, Ind., recently appointed the following battery service stations: George B. Brown & Co., 25 E. Front street, Red Bank, N. J.; Stafford Auto Co., Stafford, Kan.; Culpepper Motor Co., 2211 Front street, Meridian, Miss.; John W. Patton, 124 E. Pittsburgh, Greensburg, Pa.

**The Detroit Truck Co.**, Detroit, Mich., manufacturers of truck units for converting Ford cars into one-ton trucks, has acquired one of the largest factories in the country. It was one of the first companies to enter the truck unit field and has dealers practically in all parts of the world and is manufacturing on a large scale.

**Olds Motor Works**, Lansing, Mich., will triple the production of its Eights and Sixes by the addition of another large building, besides the large two-story buildings for storage of material and for inspection work which have been erected. This new building will be 80 by 400 feet and three stories high, with an L 80 by 90 feet. The two buildings are to be solely of steel, concrete and glass.

**The All Season Body Co.**, Marshall, Mich., has been reorganized and will resume manufacturing activities.

**Boone Tire and Rubber Co.**, Sycamore, Ill., is making excellent progress in the erection of its new plant at Chippewa Falls. The company has awarded contracts for about $20,000 worth of tire manufacturing equipment. The equipment includes two 48-inch heater presses, 31 feet high; one 7 by 7 foot hydraulic press with a capacity of 125 tires a day; one 42 by 42-inch two-opening bead press; one heel and sole press; 20 tire building stands and a hunter dry kiln.

**Ericsson Manufacturing Co.**, Buffalo, N. Y., will build an addition to its plant. The new building will start manufacturing in October and will enable the doubling of the 100 per cent. increase in manufacturing facilities. This was made necessary on account of the demand for the Berling magneto.

**Automatic Control Trailer Co.**, Columbus, O., will add to its equipment for the manufacture of automobile and truck trailers.

**The American Magneto Co.**, Monroe, Mich., is reorganizing with a capital of $400,000 and will move its plant to Toledo, O. The company employs 200 men and manufactures magnetos for motor cars, gas engines and airplanes.

**The J. P. Martin Manufacturing Co.**, Lansing, Mich., has been incorporated with $50,000 capital to manufacture anti-skid tires. The incorporators are: J. P. Martin, G. A. Wright, F. E. Hood.

**The Koehler Motor Corp.**, Newark, N. J., has increased the prices of Koehler trucks from $995 to $1150.

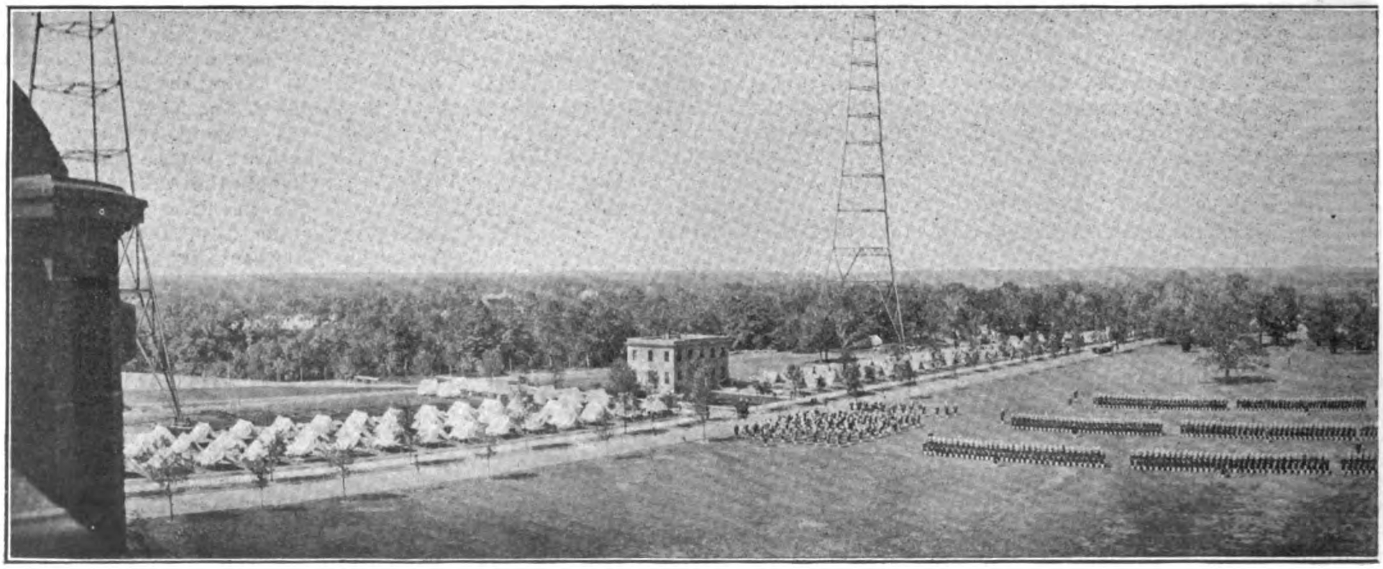
**The Willys-Overland Co.**, New York, N. Y., in the first six months of 1917 showed earnings of $6,000,000, which after allowing for proportionate dividend requirements on the $15,000,000 preferred stock is equal to 14.72 per cent. on the $37,273,844 common stock outstanding, or $3.68 a share, $25 par value. The output in the first half year period amounted to 91,489 cars, compared with 94,477 in the same period of 1916.

**The Fisher Body Corp.** reports for the quarter ending July 31 total earnings and income from all sources amounting to $776,205. After deducting interest of $28,855 on floating debt, net earnings amounted to $747,349. Allowing for dividends on the $5,000,000 outstanding preferred stock the balance of net earnings for the common stock is equivalent to $3.29 a share, or at the annual rate of $13.16 a share.

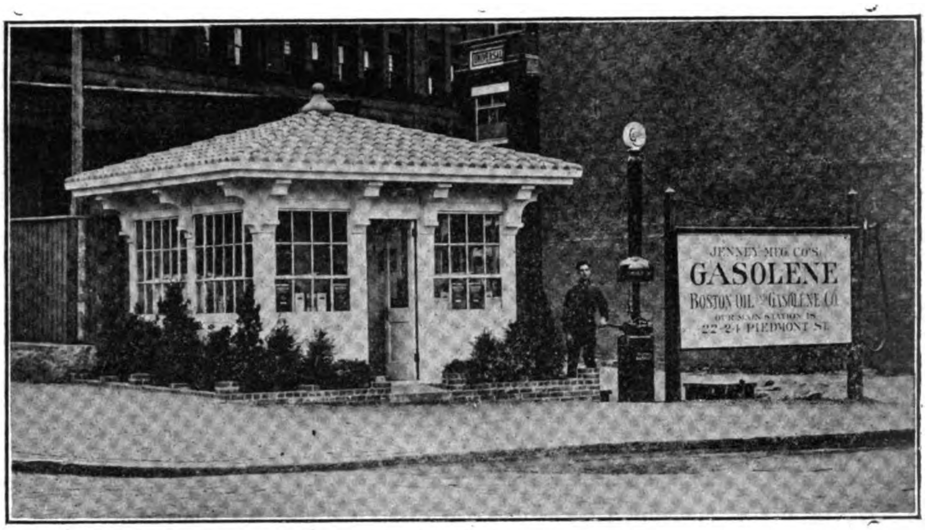
**The Hupp Motor Car Co.** for the six months ending June 30 reports net profits of $337,009, as compared with a loss of $65,530 for the preceding six months ending Dec. 31. For the year ending June 30 the company's net was $271,000, which after allowing for preferred dividends is equal to 3.4 per cent. on the $5,192,100 common stock outstanding.

**The Continental Motors Corp.**, Detroit, Mich., will show earnings of about $2,000,000 for the year.

**The Jorgenson Mfg. Co.** has been organized at Waupaca, Wis., with a capital of $75,000 and will succeed the Jorgenson Machine Co., formerly of Tustin, Wis. The plant of the Waupaca Felting Mills at Waupaca will be occupied for



**Panorama of the Roads Bordering the Parade at the United States Naval Station, Great Lakes, Ill., Constructed and Maintained Fred Hupe, Band Master, Naval**



Gasoline Filling and Supplies Station of the Boston Oil and Gasoline Co., at Berkeley and Stuart Streets, Boston, Mass.

the manufacture of carburetors, primers and kerosene vaporizing devices.

**The International Harvester Co.** of America will erect a large core factory 100x240 feet as an addition to its big foundry plant at the Milwaukee Harvester Works in Milwaukee. The new structure will cost $100,000.

**The Hyatt Roller Bearing Co.**, Harrison, N. J., has acquired the foundry building formerly occupied by Reuther Bros. on Somerset street, in that city. The building is 100x175.

**The Burlington Motor Truck Co.**, Burlington, Wis., has leased manufacturing quarters and has opened a Chicago office at 160 West Jackson boulevard. The company, which was recently incorporated with a capital of $50,000, will manufacture truck making units to be used in connection with Ford chassis. A Torbensen internal gear drive axle will be used in the attachments. A production of 600 units is planned by Jan. 1, 1918.

**The General Motors Co.** for the fiscal year ending July 31 made net profits of approximately $30,000,000, as compared with $26,789,560 for the year ending July 31, 1916. Allowing for the six per cent. dividend on the $20,000,000 preferred stock the earnings are equivalent to 34 per cent. on the common stock outstanding.

**The Chevrolet Motor Co.**, Flint, Mich., will engage in the manufacture of tractors. This fact came out as a result of a ruling sought and obtained by E. O. Wood of the Chevrolet Motor Co., asking the Department of Commerce to admit certain parts made in the Canadian factory of the company free of duty on the grounds that they were to be used at the factory in this country for the manufacture of tractors.

**The Gibson-Hollister Mfg. Co.**, makers of Jumbo spark plugs, have moved from Boston to their new plant in Springfield, Mass. This is the third time in the last two years that the company has been obliged to expand and increase its manufacturing facilities in order to keep up with the demand for its products. In addition to the Jumbo plug the company has developed a new non-rusting "Noncoro" special aviation type spark plug.

**The Drexel Motor Car Co.'s** property at Chicago, Ill., will be sold at public auction by the receiver, Harry B. Staver, in the near future. The property is appraised at $122,410.

**The Goodyear Tire and Rubber Co.**, Akron, O., during the month of August made total sales of over $12,577,000, which is the largest gross ever reached in one month in the company's history.

**The United Motors Co.**, Grand Rapids, Mich., for the year ending July 31 reports total gross sales of $597,898.31.

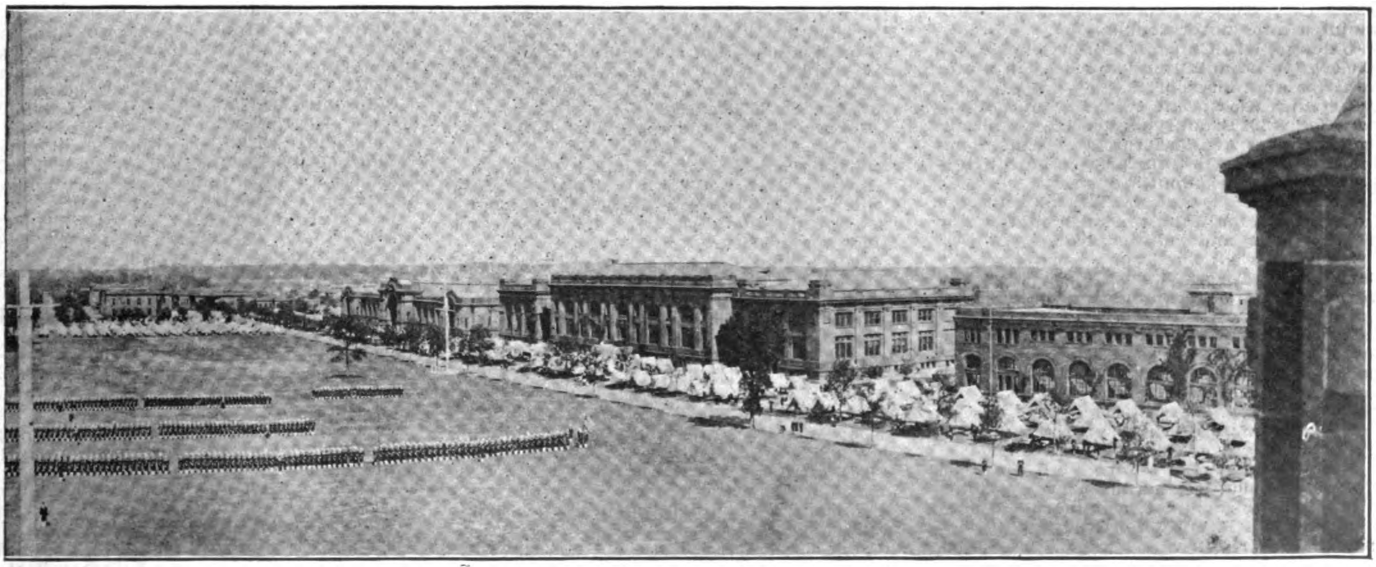
**The Scripps-Booth Motor Corp.** will increase its capital stock from 70,000 shares of no par value to 120,000 shares of no par value.

**The Prismolite Co.**, Columbus, O., makers of headlight lenses, has acquired the Benwill Manufacturing Co. of that city.

**The Firestone Tire and Rubber Co.**, Akron, O., has been made the defendant in a suit brought by Louis deF. Munger, who claims $1,500,000 back royalties on the manufacture of a rim which the plaintiff claims to have been the inventor.

**The Amston Motor Car Corp.**, which was recently organized under the laws of Connecticut with a capital of $3,000,000, has acquired the Sterling Automobile Manufacturing Co., Inc., of New York, and will build trucks and passenger cars in its own factory at Amston, Conn. The new company was organized by Charles M. Ams, its president and general manager. Temporary offices for the company have been opened at 101 Park avenue, New York City. The products will include a delivery truck of 1½ tons capacity and a roadster, five-passenger touring car and enclosed models.

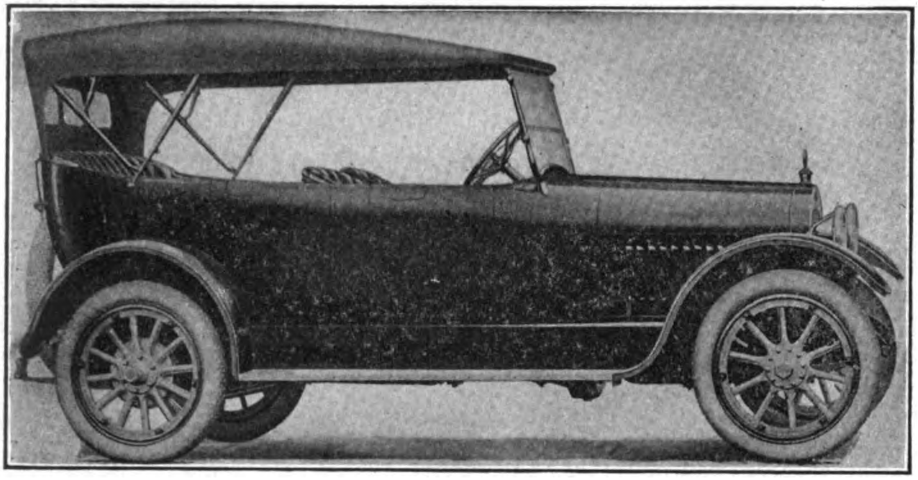
**The Gillette Motor Co.**, Mishawaka, Ind., has been cited in a suit filed by a number of the stockholders in the St. Joseph circuit court asking for an accounting to the plaintiffs and all other stockholders for all money received and expended in conducting the company's business, and also that the corporation be required to redeliver to King C. Gillette of Chicago and M. L. Williams of Mishawaka certain stock. The plaintiffs charge that the corporation is insolvent and ask that a receiver be appointed to take immediate possession of its assets.



With Tarvia—This View Was Made During Drill of the Naval Reserve Command in Training There. Photo by Permission of Training Station, Great Lakes, Ill.

# *New Lexington Minute-Man Six Disclosed*

**Manufactured by the Lexington-Howard Co., Connersville, Ind., which controls a group of factories, each of which specializes in the manufacture of certain parts of the motor car. Full mechanical description of the car printed in the Sept. 10th issue of the Automobile Journal.**



**Lexington Minute Man Six Touring Car, Showing Medium Wheelbase and Attractive Body Lines. Priced at $1345.**

**Engine, Continental 6-cylinder, L head, 3¼x4½; 25.35 horsepower (S. A. E.).**
**Carburetor, Rayfield with vacuum feed.**
**Electrical equipment, Connecticut ignition system; Westinghouse two-unit starting and lighting system.**
**Clutch, dry disc type.**
**Transmission, selective type, three speeds and reverse.**
**Axles, rear, Hess floating with spiral bevel gears.**
**Drive, through springs.**
**Wheels, artillery, Goodyear demountable rims.**
**Tires, 32x4.**
**Wheelbase, 116 inches.**

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# NEW CONCERNS RECENTLY INCORPORATED.

## Monthly Record of New Business Houses for which Charters Have Been Issued In the Various States and Classified According To Nature of Business.

### Newly Organized Manufacturers of Cars.

**Bridgeport, Conn.;** Eagle Sales Co.; $50,000; to manufacture automobiles; George N. Kickley, George H. Day, N. R. Goodman.

**Wilmington, Del.;** Imperial Auto Wheel Co., Inc.; $500,000; to deal in and manufacture automobiles and bicycle wheels of all kinds.

**Wilmington, Del.;** Line Drive Truck and Tractors Corp.; $4,000,000; to manufacture all kinds of tractors and trucks.

**Wilmington, Del.;** The Schillo Motor Sales Co.; $800,000; to manufacture automobiles and motor trucks.

**Chicago, Ill.;** Chicago Motor Service Co.; $50,000; to manufacture and deal in motor vehicles and accessories.

**Detroit, Mich.;** The Acason Farm Tractor Co.; 429 Brooklyn avenue; to manufacture the Aca-Tractor, an attachment making Ford cars into farm tractors; Herbert Acason president.

**Buffalo, N. Y.;** Angola Tire and Rubber Co., Inc.; to manufacture automobiles and deal in tires and rubber goods.

**Buffalo, N. Y.;** The Transcontinental Motors Truck Corp.; $1,250,000; to manufacture trucks, engines, motor boats; E. S. Stengel, R. A. Schmidt, P. J. Bloxham.

**New York, N. Y.;** The Charles T. Gullette Motors Corp.; $50,000; to manufacture automobiles and motorcycles; L. H. Siebel, C. T. and E. T. Gullette.

**New York, N. Y.;** Lang Propeller Co.; $45,000; to manufacture aeroplanes; A. A. D. Lang, L. T. Montant, B. N. Busch.

**New York, N. Y.;** Sante Fe Motor Car Co.; $1,000,000; to manufacture automobiles and to conduct a general agency business; W. F. O'Keefe, George G. Steigler, E. E. Wright.

**New York, N. Y.;** Triple Six Motor Corp.; $375,000; to make airplanes, hydroaeroplanes and other mechanical devices for aerial operation; R. U. Guthmann, G. Laukau, H. G. McClear.

**Rochester, N. Y.;** Wagner Motor Car Co.; $25,000; to manufacture automobiles, supplies and accessories; C. J. Wagner, G. Y. Webster, E. N. Scheely.

**Cleveland, O.;** The Weigel-Warnsman Wagon and Auto Body Co.; $20,000.

### Accessories, Equipment and Supplies.

**Harrison, Ark.;** The "Turn-Right" Headlight Co.; $100,000; to manufacture, buy and sell dirigible headlight for motor vehicles and to deal in automobile accessories; George Henkle, A. R. Baker, Oscar W. Hudgins, J. C. Medley.

**Los Angeles, Cal.;** The California Tire and Rubber Mfg. Co., Inc.; $250,000; J. J. Crube, P. C. Tennis, P. J. Maurer, J. W. Gunther, L. M. Tennis.

**Dover, Del.;** Shenango Tire Co., Inc.; $200,000; Wilber A. McCoy, W. I. N. Lelland, Charles H. Jones.

**Dover, Del.;** Watkins Tubeless Air Cooled Auto Tire Co.; $1,000,000; to manufacture automobiles, tires and tubes and goods manufactured from rubber.

**Wilmington, Del.;** Mogul Tyres, Inc.: $2,500,000; to trade and deal in and with automobile tires, goods made of rubber and other fabrics.

**Chicago, Ill.;** American Automobile Accessories Co.; $2500; to deal in automobile accessories; P. H. Van Dey, C. Iversen, J. F. Meyer.

**Chicago, Ill.;** The Guaranty Rubber Tire Co. of America; $2500; Julian N. Heldman, Edward Graff, Simon La Gron.

**Quincy, Ill.;** Security Auto Supply Co.; $15,000: to deal in automobile supplies; A. B. Cames, C. G. Hendricks, George Stockwell.

**Anderson, Ind.;** Roof Motor Specialty Co.: $50,000: to manufacture motor specialties; Robert N. Roof, James A. McMyler, William N. Durbin.

**Des Moines, Ia.;** The Camp Dodge Auto Supply Co.; $10,000; to deal in tires and accessories; H. C. Carr, A. R. Corning, F. M. Duncan, J. M. Cushman.

**Portland, Me.;** The Standard Rubber Co.; $500,000; to deal in rubber tires.

**Boston, Mass.;** Beacon Tire Co. of Boston; $15,000; Philip A. Drew, president; Leonard T. Purdy, treasurer; B. B. Libby.

**Plainfield, N. J.;** Century-Plainfield Tire Co., 902 North avenue; $100,000; to manufacture tires and inner tubes.

**Newark, N. J.;** Clarke Machine Mfg. Co.; $100,000; to manufacture automobile accessories and electric appliances.

**New York, N. Y.;** Blacklock-Posner Tire Co., Inc.; $15,000; to make and deal in rubber and composition tires; H. H. Jacobson, C. A. Weldon, S. Bernheim.

**New York, N. Y.;** Multi-Life Tube and Rubber Co., Inc.; $90,000; to manufacture tubes, rubber goods and tires; C. W. Blanford, C. D. Quick, I. D. Hamilton.

**Columbus, O.;** The Lawwell-McLeish Co.; $15,000; F. H. Lawwell, M. M. McLeish, E. K. Merwine, N. Bales, James Judge.

**Sioux Falls, S. D.;** Mid West Mfg. Co.; $100,000; to deal in auto repair business and auto accessories; J. A. Wyllie.

**San Antonio, Tex.;** Callaway Tire Co.; $8000; C. E. Callaway, Neele Callaway, Russell Myrick, J. C. Myrick.

### Dealers In Automobiles and Motor Trucks.

**Mobile, Ala.;** Robinson Motor Co.; $4000; J. A. Robinson.

**Jacksonville, Fla.;** Seminole Motor Co.; $25,000; to deal in automobiles; G. Muller.

**Chicago, Ill.;** Yancey Morris Auto Sales Co.; $2500; Harry T. Yancey, Joseph W. Morris, Richard P. Poulton.

**Ft. Wayne, Ind.;** Motor Row Association, Inc.; to improve condition of motor row and adjacent thoroughfares; Carl G. Fisher, William Esterly, Frank F. Smith, Theodore E. Myers, Paul Keyes, Aaron Wolfson, Bruce M. Wylie.

# *Jones Six-Sixty Announced For 1918 Season*

**Made by the Jones Motor Car Co., Wichita, Kan., and described in its mechanical details in the Automobile Journal of Sept. 10, 1917. The line includes a seven-passenger touring car, the same with Victoria top at $100 extra, and a five-passenger roadster with divided front seats.**

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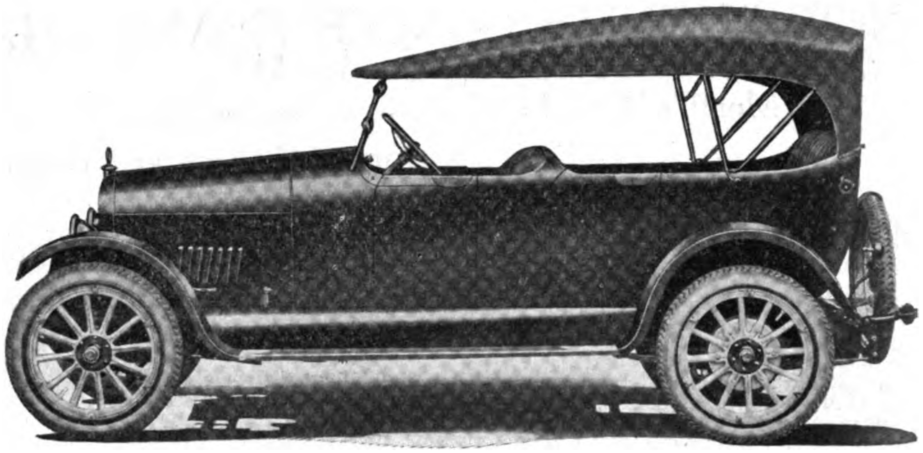

**Jones Seven-Passenger Touring Car, Carrying a Body with Rounded Edges and Fine Lines. Price $1675.**

**Engine, Lewis six-cylinder, 3½x5⅛, 29.39 horsepower (S. A. E.).**
**Carburetor, Stromberg with dash adjustment, vacuum fed.**
**Electrical equipment, Remy, two-unit starting and lighting system, starting motor with bendix drive.**
**Lubrication, force feed and splash with plunger pump.**
**Cooling, thermo-syphon.**
**Clutch, Borg & Beck dry plate.**
**Transmission, sliding selective, three speeds and reverse.**
**Control, centre; drive, left side.**
**Axles, rear, Timken with spiral bevel differential; front, Timken I beam.**
**Springs, front, semi-elliptic, 40 inches; rear, semi-elliptic, 57 inches long, 2½ inches wide.**
**Wheels, artillery type. Firestone demountable rims.**
**Tires, 34x4, straight side; non-skid front and rear.**
**Wheelbase, 125 inches.**

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**Richmond, Ind.;** Webb-Coleman Co.; $7000; to deal in automobiles and to repair automobiles; Charles E. Webb.

**Lake Charles, La.;** Huber Motor Co.; to deal in automobiles; T. L. Huber, J. H. McMahon, J. A. Foster.

**Bangor, Me.;** Penobscot Motor Car Co.; $10,000; to deal in automobiles and patents; Edward J. Mutty, Clarence L. Gilkey, Allen P. Trask.

**Boston, Mass.;** Sturtevant Motor Co., Inc.; $20,000; W. L. Sturtevant, treasurer; Harold T. Sturtevant, clerk; T. F. O'Brien.

**Springfield, Mass.;** N. E. Commercial Car Corp.; $50,000; Albert E. Main, Benjamin E. Hildreth, J. R. Donnelly.

**Jackson, Miss.;** The Palmer Wagon and Buggy Co.; $50,000; to deal in vehicles; E. Palmer.

**Poplar Bluff, Mo.;** Butler County Auto Co.; $5000; to deal in automobiles.

**Newark, N. J.;** W. A. K. Motor Co., 810 Broad street; $50,000; to conduct a general automobile and trucking business.

**Plainfield, N. J.;** Somerset Motors Corp.; $25,000; to do a general automobile business.

**Albany, N. Y.;** Albany Motor Car Co.; $3000; to deal in automobiles and motorcycles; to conduct a garage and repair automobiles.

**Bayshore, N. Y.;** Suffolk Air Craft, Inc.; $75,000; to make airplanes and other aircraft; A. J. Craft, J. and J. O'Kelly.

**New York, N. Y.;** Korn & McCracken, Inc.; $10,000; to deal in automobiles and motorcycles; F. K. Van Nostrand, C. A. McCracken, C. Korn.

**New York, N. Y.;** Lenox Auto-Homes Corp.; $10,000; to conduct a general automobile business; S. B. Jettelson, L. Feibel, A. Weisser.

**New York, N. Y.;** Hester Motors, Inc.: $50,000; general auto business; H. C. K. and A. W. Hester.

**New York, N. Y.;** Robbins Auto Delivery Co., Inc.; $7500; to conduct a transfer, express and trucking business; M. M. Rubenstein, E. Friedman, M. Holpert.

**Greenville, N. C.;** Robersonville Auto Co.; $25,000; to deal in automobiles; E. G. Flannigan.

**Cleveland, O.;** The M. R. Motor Car Co.; $12,000; Marcellue Reid, W. A. Grigsby, W. H. Foote, J. A. Manning, R. W. Jermiah.

**Delphos, O.;** The R. L. Peltier Tire Co.; $10,000; R. L. Peltier, O. T. Ross, J. R. Tillotson, A. S. Perkins, M. A. Droitcour.

**Bartlesville, Okla.;** Pomeroy Carriage and Automobile Works; $20,000; to deal in automobiles.

**Tulsa, Okla.;** Albertson Motor Sales Co.; $10,000; to deal in automobiles; J. Albertson, P. A. Wilson.

**Knoxville, Tenn.;** Pace Motor Car Co.; $10,000; to deal in automobiles; Ben G. Morton.

**Nashville, Tenn.;** Bolton Blackwood Co.; $10,000; to engage in automobile business; George W. Bolton, Dan E. McGuigan, Frank M. H. Gerard, W. E. Steger, H. O. Blackburn.

**Houston, Tex.;** Universal Car Co.; $15,000; to deal in automobiles; F. E. Lewis, G. A. Gandre, M. W. Bunch.

**Tyler, Tex.;** East Texas Motor Co.: $15,000; to deal in automobiles: L. F. Key, D. G. Connally, B. Wadel, C. W. Boon, J. A. Caswell.

**Anderson, S. C.;** Piedmont Auto Co.; $5000; to deal in automobiles; W. R. Tramell.

**Provo, Utah;** Black Motor Co.; $5000; to deal in automobiles; Maxwell agency; D. Fields, J. Hansen, E. R. Black, G. F. Summers.

**Madison, Wis.;** Washington Motor Car Co.; $50,000; to deal in automobiles and to conduct a garage; C. F. Bender, E. G. O'Brion, E. H. Whitcomb.

**Everett, Wash.;** Mack Bu'ck Co.; $10,000; George E. Mack, Corwin S. Shank, A. M. Major.

## Parts and Fittings Makers Incorporated

**Stamford, Conn.;** Hydro Electro Metallic Battery Co.; $20,000; C. L. Pittsman, D. L. Humphrey, J. F. Johnson.

**Dover, Del.;** McCord Silent Sleeve Motors Co.; $200,000; to manufacture, buy and sell internal combustion engines.

**Wilmington, Del.;** Motor Specialties Corp. of Chicago; to deal in automobile carburetors, starters and automobile appliances.

**Decatur, Ill.;** Mixbite Carburetor Co.; $30,000; to manufacture carburetors and automobile accessories.

**Boston, Mass.;** Truxton Motors, Inc.; $25,000; James F. Bacon, president; F. Chester, treasurer; W. P. Kelley.

**Holyoke, Mass.;** Dwight Motor Co.: $1000; president and treasurer, William J. Gray; clerk, Matthew T. Doherty.

**Benton Harbor, Mich.;** The Benton Harbor Auto Machine Co.; $174,000; to manufacture machinery and parts.

**Grand Rapids, Mich.;** The Universal Auto Top Co.; $25,000; to manufacture tops for automobiles.

**New York, N. Y.;** Pursel Resilient Wheel Co., Inc.; $500,000; to make auto wheels, engines and motors; H. J. and W. A. Neumann, J. D. Pursel.

**Akron, O.;** The Glass-Case Motor Co.; $10,000; Walter E. Case.

**Toledo, O.;** The Fam-us Carburetor Co.; $50,000; M. C. Boesel, R. Rath, R. E. Shook, C. L. Fallon, M. C. Moss.

**Oklahoma City, Okla.;** Heckethorn Bradley Motor Sales Co.; $5000; F. E. Heckethorn, Edward Howell, C. M. Bradley.

**Tulsa, Okla.;** The Mitchell Motor Sales Co.; $10,000; B. M. Grotkop, Jack Albertson, Paul A. Wilson.

**Dallas, Tex.;** Loomis Wheel and Body Works Co.; $7500; A. M. Loomis, E. M. Powell, Walter G. Miller.

**Dallas, Tex.;** Yesner Motor Co.; $10,000; Leon M. Yesner, Henry T. Levy, Victor H. Hexter.

## Garages and Repair Shops Newly Chartered

**Pueblo, Col.;** Jordan-Writer Motor Co.; $10,000; to conduct an auto garage; L. M. Writer, H. Writer.

**Torrington, Conn.;** Torrington Auto Service Co., Inc.; $50,000; to conduct a garage; Clarence W. Beckley, Tom Larmett, Harry Allington.

**Wilmington, Del.;** The Tire Shop Co.: $75,000; to conduct an automobile supply store.

**Miami, Fla.;** Montana Co.; $3000; to conduct a garage; Fred W. Baker.

**Chicago Heights, Ill.;** Vincennes Avenue Garage Co.; $5000; to conduct a garage; E. E. Smith, M. Kohn, C. A. Hood.

**Indianapolis, Ind.;** DeKalb Sales and Service Co.; $6000; to conduct a garage and service station; George S. Baxter.

**Malden, Mass.;** Malden Center Garage, Inc.; $25,000; to conduct a garage; Wilbert M. Bean, Harold R. Bean.

**Kansas City, Mo.;** Peerless Garage Co.; $2000; to operate a garage and automobile repair shop; Oscar C. Wiesner, Albert Canady, John N. Powell.

**Albany, N. Y.;** Murphy Auto Service, Inc.; $3000; to conduct an auto service garage; Francis B. Murphy, Ida O. Murphy, John H. Murphy.

# NEW BUSINESS CONCERNS AND CHANGES OF NAMES.

## The Month's Record of Transfer of Ownerships and Opening of Garages, Agencies, Branches, Service Stations and Repair Shops.

### Recent Transfers of Business Ownerships.

**Grass Valley, Cal.;** John Champion succeeds E. E. Leitcher in the Alpha Garage.

**Blakely, Ga.;** The Blakely Motor Car Co. has purchased Felder's Garage and Ford agency. The company is under the management of S. D. Clark.

**Moline, Ill.;** J. F. Delancy, Fourth and 12th avenues, has purchased the Heburn and Pope Garage.

**Coin, Ia.;** The O. K. Garage, formerly owned by L. A. Wiar, has been purchased by W. E. Newman & Son.

**Casey, Ia.;** Warren Cline has purchased the Casey Auto Co.

**Iowa Falls, Ia.;** J. E. Gougan has sold his garage to Albert Yonker.

**Kimballton, Ia.;** The Welddum Motor Co. has purchased the Elkhorn Automobile Co.

**Lawrence, Mass.;** The Robinson Hardware Co. has purchased the Briggs & Allyn manufacturing plant on Winter street and will alter same into a large salesroom and auto repair shop.

**Black River Falls, Mich.;** The Hogg & McManus garage business has been sold out to McManus & Landers.

**Iron River, Mich.;** Peter Thorin has purchased the Riverside Garage from W. A. Premo and will assume control of same.

**Bellingham, Minn.;** Jacob Hebrank has purchased a half interest in the August Wolf Garage.

**Sherburne, Minn.;** The Sherburne Garage has been sold by John Grill to Anderson & Flessner.

**Holcomb, Mo.;** W. R. Boswell and Jesse Anthony have bought the garage. They will keep a complete stock of supplies and give first class service.

**Billings, Mont.;** The Haskell Motor Co. has purchased the C. & M. Garage.

**Eagle, Neb.;** William Sachs has purchased a half interest in the East Side Garage.

**Plymouth, Neb.;** Nispel & Metcalf has bought the garage of H. A. Thiessen, who bought out A. W. Weichel, and will conduct both places.

**Clarks, Neb.;** The Ferguson Garage has been purchased by John Zweibel.

**Petersburg, Neb.;** Kunkle & Lochmiller have dissolved partnership. Mr. Lochmiller has bought the interests of H. L. Kunkle, who has retired.

**Fargo, N. D.;** The Northern Automobile Co. has been purchased by the Pence Automobile Co.

**Linton, N. D.;** Harry Cockburn has purchased the Lingenfelter interest in the Linton Auto Co.

**Medford, Okla.;** Montgomery & Son have sold their Studebaker garage here to Edward Baum.

**Portland, Ore.;** The Stoddard-Dayton Garage has been purchased by E. E. Crandall and W. H. Miller.

**Davis, S. D.;** Ben Knock, Jr., has purchased the N. H. Svenstrup Garage.

**Salt Lake City, Utah;** J. A. Greenwald has purchased the Mercer Auto Sales Co. from Bernard G. Byers. The salesrooms will be located for the present at 33-39 West Third South street. Harry Kaar is associated with Greenwald in the new enterprise.

**Friesland, Wis.;** Bubholtz & Numerdor have dissolved partnership.

### Factories, Garages and Repair Shops.

**Peoria, Ill.;** The Pinkerton Motor Co. has opened new salesrooms, garage and service station at 809-823 Main street. The company handles the Dodge Brothers, Chevrolet, Dort and Saxon cars, and has also the state distribution of Hassler shock absorbers.

**Chelsea, Mass.;** The Bristol Auto Shop has reopened with a new modern repair department and a complete line of automobile parts and accessories.

**Ionia, Mich.;** Miller & Ashe, local agents for Dodge and Studebaker cars, have opened their new garage and salesroom on Main and Dexter streets.

**New York, N. Y.;** The Ajax Trucking Co. has leased the store and basement at 413-15 West Broadway.

**New York, N. Y.;** I. Berger has leased the three-story garage at 152 Elizabeth street from Louis Carreau.

**Fairmont, N. D.;** W. P. Cooper has reopened his repair shop.

**Fort Worth, Tex.;** Fred Castleberr has opened a garage at 911 Commerce street. The latest equipment and a line of accessories and parts have been installed.

**Algoma, Wis.;** A. E. Schultz has opened a service and sales garage in the Swaty building on Steele street.

**Kenosha, Wis.;** Schulein & Topel have opened a garage.

**Mukwonago, Wis.;** Harry Smart has opened a garage.

### Agencies, Dealers and Service Stations.

**Lewiston, Ida.;** The Lewiston Cycle and Supply Co., 309 Main street, has been given the Prest-O-Lite agency.

**Nampa, Ida.;** The Nampa Storage Battery Co., 1101 Front street, will give service on Prest-O-Lite batteries.

**Goshen, Ind.;** H. H. Lytle has organized the Maple City Rubber Supply Co. The company will handle tires. The offices are in the Hawks-Gortner building.

**Marion, Ind.;** Fred N. Druly has been appointed to give service on Prest-O-Lite batteries.

**Louisville, Ky.;** Fred W. Lyons has entered into the automobile and accessory field with offices and salesrooms at Second and Main streets.

**Minnesota, Minn.;** The Foster Motor Co. has opened for business at Michigan street and First avenue W. The company will deal in Ford cars, accessories and parts and will give first class service.

**Kalispell, Mont.;** The Schwiers Garage, located at the corner of R. R. street and Second avenue E, has been appointed to give service on Prest-O-Lite batteries.

**Buffalo, N. Y.;** The H. C. Loveland has secured the agency for Haynes cars in Buffalo and surrounding territory.

**Buffalo, N. Y.;** The Packard-Buffalo Motor Co., Inc., has opened its new and up-to-date show rooms at 300 Delaware avenue.

**St. Louis, Mo.;** The Bailey Auto Body and Sales Co. has opened at 2113-2117 Olive street.

**Nowata, Okla.;** The Heckethorn-Bradley Motor Sales Co., Inc., has signed a contract with the Sutton Motor Co. for the distribution of Mitchell cars in Oklahoma City and county.

**West Chester, Penn.;** The Pusey Young Storage Battery Station at 117 W. Market street has been appointed to give service on Prest-O-Lite batteries.

**Fort Worth, Tex.;** The General Auto and Supply Co. has taken the local agency for Quaker tires.

**Price, Utah;** The Price-Emery Auto line has secured the local agency for Kissel cars and trucks.

**Madison, Wis.;** The Fisk Rubber Co. has opened a new branch and service station at 212-14 South Pickney street.

### New Business Locations and Removals.

**Oakland, Cal.;** United Electric Vehicle Co., 3310 Telegraph avenue, has moved to 2740 Broadway.

**Hartford, Conn.;** Wilfrid Hector, 120 Allyn street, has moved from 226 Pearl street to the above address.

**Hartford, Conn.;** The Perry Motor Supply Co. is now established in its new quarters at 104 Allyn street. The store is stocked with a good supply of accessories and parts.

**Atlanta, Ga.;** The Johns-Manville Co. has moved from 31 A South Broad street to 138-40 Marietta street.

**Decatur, Ill.;** Chester F. Russell has moved from 241 East William street to 248 West Main street. This was made necessary on account of the increasing business.

**Chicago, Ill.;** A. B. C. Auto Livery, 6230 Cottage Grove avenue, has moved to 51st street.

**Chicago, Ill.;** Acorn Garage, 53 Garfield, has moved to 5248 Michigan avenue and 51st street.

**Chicago, Ill.;** Austin Doyle & Sons is now located at 1455 Fargo avenue. They were formerly located at 6564 Harward avenue.

**Chicago, Ill.;** American Taxicab Co., 1810 Wells street, has moved to 1126-1128 South Wabash avenue.

**Rockford, Ill.;** The Motor Mart has opened in its new location at 124 North Madison street. The Mart was formerly located at 714 Market street.

**Rutland, Ill.;** Ingram Motor Car Co. is now located at 340-44 Knoville avenue, Peoria, Ill.

**Anderson, Ind.;** The C. L. Bragdon Sales Co. has moved to new quarters on East Ninth street, in the rooms formerly occupied by the Waddell-Buick Co. The company is the local distributor for Chevrolet and Monroe cars.

**Peru, Ind.;** Earlywine Garage is now located at Somerset, Ind. The garage was formerly located at 21 East Main street.

**Des Moines, Ia.;** Cottage Grove Auto Co., 2126 Cottage Grove avenue, has moved to 1245 14th street.

**Davenport, Ia.;** Davenport Rubber Co., Third and Scott streets, is now located at 228 West Sixth street.

**Baltimore, Md.;** Studebaker Auto Agency, 605 W. North avenue, has moved to 10 East North avenue.

**St. Louis, Mo.;** Gorman Brothers, 4049 Olive street, has moved to 3919 Washington street.

**Broken Row, Neb.;** The Ream Garage has removed to the Lyric building.

**Brooklyn, N. Y.;** Palmer Heming Motor Co., 103 Court street, has moved to 1873 Court street.

**Cleveland, O.;** E. Niggle & Son, 1897 W. 48th street, has moved to 1026 Madison avenue.

**Toledo, O.;** Franke Motor Sales Co is now located at 2133 Jefferson avenue. The company was formerly located at 312 18th street.

**Portland, Ore.;** The Twin States Automobile Co. is now located at 64 Broadway. The company handles Chandler cars.

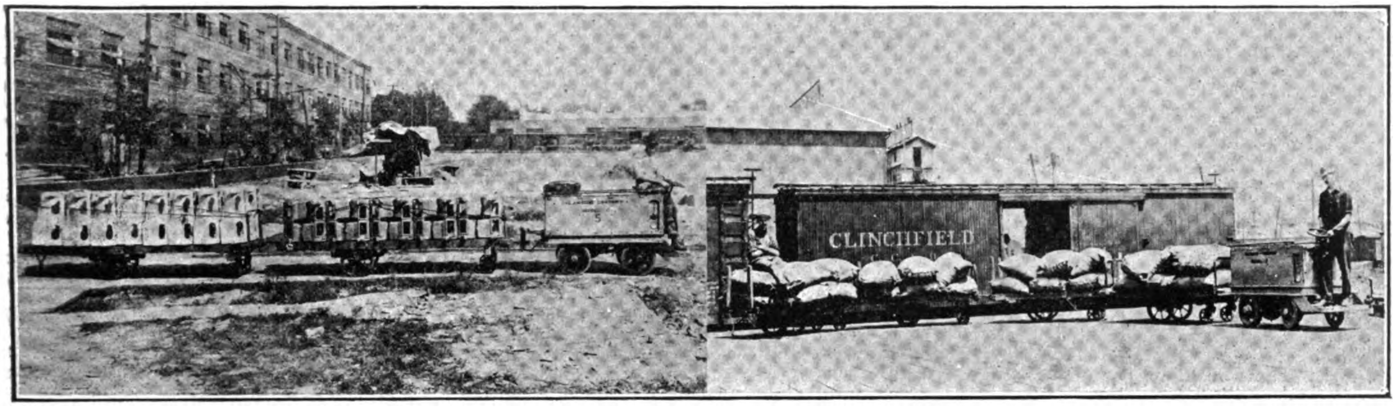
**Brady, Tex.;** J. W. Brady will move the Ford garage to the Broad building on South Blackburn street.

**Thompsonton, Penn.;** Leyder Motor Co. has moved to Port Royal, Penn.

**Spokane, Wash.;** The Snyder Motor Car Co. has moved from their former quarters at 1311 Sprague avenue to a new salesroom located at 1201 First avenue.

**Milwaukee, Wis.;** H. A. Koech & Co., 308 20th street, has moved to 303 16th street.

# *Service Trucks for Building Equipment Deals*



**Industrial Trucks Made by the Lansing Co., Lansing, Mich., Shown on a Building Operation and at a Freight Terminal. They Are Built in Sizes Having Rated Load Capacities of 5000 and 12,000 Pounds. Motors and Control Equipment Built by the Westinghouse Electric and Manufacturing Co., Pittsburgh, Pa.**

# RECORD OF NEW BUILDING PLANS IN SEPTEMBER

## Contracts Made and Plans Contemplated for Alterations or the Building of Garages, Repair Shops, Service Stations and New Plants.

### Contemplated Plans and Specifications.

**Opelika, Ala.;** Isham J. Dorsey; one-story garage, 50x150.

**Little Rock, Ark.;** United States Auto Company; two-story fireproof garage, 123x150; first floor 18,000 square feet of floor space for salesroom, office and supply department; second floor for shops and storage room; sprinkler system.

**Los Angeles, Cal.;** William Garland, 954 Hope street; one-story garage, 100x157; $60,000.

**Pomona, Cal.;** Larimer Beckner, 237 E. Second street; one-story garage, 72x120.

**San Francisco, Cal.;** F. L. Zipp; one-story garage; $2500.

**Santa Barbara, Cal.;** B. R. Rodman; one-story garage, 65x200.

**Boulder, Col.;** W. S. Withers, 12th and Walnut streets; one-story garage; $15,000.

**Denver, Col.;** A. Judelvitz, 1353 Vine street; one-story garage, 50x125; $8000.

**Bridgeport, Conn.;** Reo Garage, Inc., 170 Elm street; two-story garage, 60x46x120.

**Bridgeport, Conn.;** J. W. Northrop, Court Exchange building; two-story garage, 42x100.

**Hartford, Conn.;** W. W. Walker, 146 Allyn street; $35,000.

**New Britain, Conn.;** Horace Booth estate; one-story garage, 27x27.

**New Haven, Conn.;** J. Grazinso; one-story public garage, 58x90.

**New Haven, Conn.;** F. A. Palmieri; one-story garage, 50x40.

**Noroton, Conn.;** H. M. Ward; two-story public garage, 30x50.

**Waterbury, Conn.;** Victor Roberts, 55 Hill street; one-story public garage, 18x84; $2500.

**Waterbury, Conn.;** M. J. Byrne, 57 N. Main street; one-story garage, 50x20 and "L." 35x18.

**West Haven, Conn.;** A. Squandram, 356 Savin avenue; one-story garage, 46x120.

**Wilmington, Del.;** J. J. Kennedy, 925 Market street; two-story garage, 40x60; $8000.

**Fort Pierce, Fla.;** Overland Garage Company; one-story garage, 59x180; $9000.

**Algonquin, Ill.;** Lace & Reimer; one-story garage, 50x105.

**Barrington, Ill.;** G. W. Spirner; one-story public garage, 132x82; $12,000.

**Bushnell, Ill.;** Talbot & Garwood, Plymouth, Ill.; one-story public garage, 50x144; $10,000.

**Cairo, Ill.;** Standard Oil Company; one-story filling station, 24x40; $2000.

**Chicago, Ill.;** Gibson Motor Car Co., 9236 E. 47th street; one-story garage; $50,000.

**Chicago, Ill.;** Lawrence Azecka; one-story garage, 53x55; $10,000.

**Chicago, Ill.;** A. J. Sheridan, 4548 N. Leavitt street; one-story garage, 50x185; $17,000.

**Chicago, Ill.;** George F. Woods, 8226 Evans avenue; one-story private garage, 25x18; $7000.

**Chicago, Ill.;** Central Garage Syndicate; one-story garage, 110x136; $25,000.

**Chicago, Ill.;** John Fuhrman, 3164 N. Clark street; two-story garage, 50x62; $20,000.

**Chicago, Ill.;** Robb Motor Co.; two-story public garage, 100x125; $50,000.

**Cicero, Ill.;** John Klucina, 56th avenue and 19th street; one-story garage, 50x125; $12,000.

**Crystal Lake, Ill.;** J. P. Kroeger; one-story public garage, 50x120; $10,000.

**Davis, Ill.;** R. W. Fosler and C. Ruter; one-story garage, 42x72.

**Decatur, Ill.;** Pierce & Caldwell, Mill and Williams streets; one-story garage; $10,000.

**Elizabeth, Ill.;** N. A. Gault; one-story garage, 50x120.

**Galena, Ill.;** T. M. Harney. 206 N. Main street; two-story public garage, 50x120; $20,000.

**Grant Park, Ill.;** C. A. Newton; one-story public garage, 50x120; $10,000.

**Freeport, Ill.;** O. D. Wells; one-story garage, 40x80.

**Hurdland, Ill.;** Delaney Brothers; one-story garage, 74x126.

**Kankakee, Ill.;** C. D. Henry, Arcade building; one-story garage, 60x120; $15,000.

**Kankakee, Ill.;** Kankakee Milk and Cold Storage Co.; two-story garage, 50x145; $10,000.

**Marengo, Ill.;** Marengo Foundry and Machine Co., State and Railroad streets; one-story garage, 150x80.

**Morrison, Ill.;** Frank Moulton; one-story public garage, 60x64.

**Oak Park, Ill.;** Snow Brothers, 822 E. 43rd street, Chicago; one-story public garage, 65x160; $10,000.

**Cannelton, Ind.;** William Lehman; one-story garage, 50x90; $8000.

**Elkhart, Ind.;** J. E. Smith & Son; one-story public garage; $50,000.

**Fort Wayne, Ind.;** Standard Oil Co.; one-story garage, 50x50; $12,000.

**Gary, Ind.;** South Shore Garage and Motor Sales Co.; one-story garage; $25,000.

**Goshen, Ind.;** B. G. Schaefer, 109 W. Malison street; one-story private garage, 22x12.

**Indianapolis, Ind.;** Garritt A. Archibald, 1133 N. Meridian street; one-story garage; $15,000.

**Rochester, Ind.;** J. E. Beyer; one and two-story public garage, 90x90.

**South Bend, Ind.;** Henkle Motor Car Co., 227 N. Lafayette street; one-story garage; $60,000.

**Washington, Ind.;** J. H. Duffy; one-story garage, 62x132; $15,000.

**Waterloo, Ind.;** Rudd Motor Co.; one-story public garage; $10,000.

**Albert City, Iowa;** A. H. Nelson; one-story garage, 50x80; $5000.

**Corydon, Ia.;** Corydon Auto Co.; one-story garage, 50x110; $8000.

**Des Moines, Ia.;** A. H. Hoffman, 512 S. & L. building; one-story garage, 52x132; $10,000.

**Montezuma, Ia.;** L. A. Shearer; one-story garage, 66½x132; $10,000.

**Sioux City, Ia.;** J. L. Levitt, 419 Nebraska street; one-story garage, 50x100; $6000.

**Sioux City, Ia.;** Lessnick estate; three-story automobile sales building; $80,000.

**Coats, Kan.;** E. F. Jacks; one-story garage, 50x140; $10,000.

**Halstead, Kan.;** O. E. Jones; one-story garage, 35x80.

**Hanover, Kan.;** M. Poell; one-story garage, 50x100.

**Hill City, Kan.;** R. L. Jackson; one-story garage, 75x140.

**Satanta, Kan.;** Hutchinson Brothers; one-story garage, 50x140.

**Simpson, Kan.;** J. L. Robertson; one-story garage, 100x50.

**Wichita, Kan.;** Packard-Chandler Agency, Third street and Lawrence avenue; garage and salesroom; $60,000.

**Covington, Ky.;** Charles West; one-story private garage, 24x28; $1000.

**Louisville, Ky.;** Daniel and Edward Rommell; three-story brick and concrete garage; $45,000.

**Louisville, Ky.;** Monarch Auto Co., 142 E. Broadway; commercial garage; $30,000.

**Louisville, Ky.;** Electric Garage Co., 1816

S. Second street; one-story garage; $4500.

**Caribou, Me.;** O. L. Keyes; two-story public garage, 80x100; $10,000.

**Eastport, Me.;** S. S. Frost; two or three-story public garage, 26x50; $10,000.

**Gardiner, Me.;** R. P. Hazzard; two-story garage, 33x61.

**Portland, Me.;** J. J. Missen Baking Co., 63 Washington avenue; two-story private garage, 20x58; $3500.

**Portland, Me.;** George D. Duffy, 22 Spruce street; one-story garage, 110x150; at 687-95 Forest avenue; $15,000.

**Baltimore, Md.;** Joseph C. Smith, 2330 McElderry street; one-story garage, 30x80; $7500.

**Baltimore, Md.;** Henry A. Knott & Co., 2101 N. Calvert street; 1½-story garage, 18x201; $1000.

**Boston, Mass.;** Andrew De Stefane, 6 Everett court; one-story garage, 24x60.

**Boston, Mass.;** John De Vito, 160-62 Liverpool street; one-story garage, 76x79.

**Boston, Mass.;** Elm Hill Garage Co., Fidelity Trust building; commercial garage, 105x200; $25,000.

**Boston, Mass.;** John Herbert, 14x20 Custom House street; six-story garage, 60x80.

**Boston, Mass.;** George G. Arcand, 20 Cambia street; one-story garage, 60x18.

**Boston, Mass.;** J. J. Johnston, 261 Brookline avenue; one-story garage, 300x180; $160,000.

**Boston, Mass.;** W. H. Patridge, 90 Westland avenue, Back Bay district; two one-story garages, 36x79 and 41x74.

**Boston, Mass.;** Herbert Perkins; one-story garage, 92x100; $18,000.

**Boston, Mass.;** Harold G. King; two-story garage, 70x80; $180,000.

**Boston, Mass.;** Sullivan Square Garage Co.; one-story garage; $10,000.

**Boston, Mass.;** Portland Street Garage, Inc.; six-story public garage, 78x140; $150,000.

**Boston, Mass.;** Garchin & Baskin, 54 Mascoma street; one-story public garage, 120x150.

**Cambridge, Mass.;** Newton Garage Co., 815 Somerville avenue; one-story public garage, 112x70 and 50x50; $25,000.

**Cambridge, Mass.;** T. Libby & Co., 229 Bent street; one-story garage for commercial vehicles only, 100x88; $15,500.

**Chelsea, Mass.;** Nathan Weiner, 116 Pearl street; two-story garage, $45,000.

**Dartmouth, Mass.;** Theodore A. Brightman, South Dartmouth; one-story garage, 40x50; $2500.

**Dedham, Mass.;** L. B. Salt; one-story private garage, 20x21.

**Dedham, Mass.;** Mt. Vernon Realty Trust Co., 101 Tremont street, Boston; one-story private garage, 20x21.

**Greenfield, Mass.;** Davenport Garage, Inc.; one-story garage; $10,000.

**Holyoke, Mass.;** Arthur Perron, 62 West street; one-story garage, 25x47.

**Holyoke, Mass.;** Paul Basamina; one-story garage, 31x65; $7000.

**Lawrence, Mass.;** Perry Motor Car Co.; one-story garage; $10,000.

**Littleton, Mass.;** George Wood; one-story garage; 50x80.

**Medford, Mass.;** John Pierce, 98 Winchester street; one-story garage, 60x70; $10,000.

**Medford, Mass.;** Patrick A. Cadigan; one-story garage, 200x50; $20,000.

**New Bedford, Mass.;** Edward C. Early, 21 James street; one-story garage, 40x60; $5000.

**Newton, Mass.;** Edward McKinney, 273 Washington street; one-story garage, 113x82; $35,000.

**Quincy, Mass.;** Connell & McKone Co., Boston; automobile storage station; $30,000.

**Revere, Mass.;** Joseph Miller, 51 Highland street; one-story garage, 70x114; $10,000.

**Somerville, Mass.;** Joseph Klein, 112 Tudor street; one-story garage, 113x119; $30,000.

**Southbridge, Mass.;** Joseph Sorletto, 3 Elm street; two-story garage, 136x50; $10,000.

**Springfield, Mass.;** Alphonse Collini, 71 Summer street; one-story garage, 41x45.

**Springfield, Mass.;** Gagnier & Angers, 327 Main street; two-story garage, 100x70; $20,000.

**Springfield, Mass.;** Harry Bland, 53 Church street; one-story garage; $6000.

**Swampscott, Mass.;** Boyd & Berry; one-story garage; $15,000.

**Watertown, Mass.;** Thomas J. McCue, 264 N. Beacon street; one-story public garage, 55x89; $5500.

**Worcester, Mass.;** Jacob Burwick, 94 Front street; one-story public garage, 132x50; $15,000.

**Ann Arbor, Mich.;** Goodspeed Real Estate Co., for H. S. Platt for Ford sales, service station; one-story garage, 90x132.

**Detroit, Mich.;** F. N. Sibley Lumber Co., Kercheval and Beaufait avenues; one-story garage, 50x54.

**Detroit, Mich.;** Thomas Goodfellow, 517 Fifth street; one-story public garage, 84x76; $20,000.

**Detroit, Mich.;** Watson & Zumstein, 823 Majestic building; three-story service station, 113x150; $100,000.

**Detroit, Mich.;** George W. Renchard, 3000 E. Grand boulevard; one-story garage, 20x20.

**Grand Rapids, Mich.;** S. S. Core, Commerce avenue and Island street; one-story garage, 50x135; $35,000.

**Highland Park, Mich.;** James H. McDonald, 1328 Woodward avenue, Detroit; three-story garage, salesroom and service station, 56x150; $60,000.

**Ironton, Mich.;** Roach & Seeber; one-story garage, 41x80; $6000.

**Kent City, Mich.;** George W. Barrett; one-story public garage, 50x100; $8000.

**Marquette, Mich.;** E. W. Jones, 112 W. Spring street; two-story garage, 60x120; $12,000.

**Saginaw, Mich.;** Hubbell Auto Sales Co., 100 S. Water street; one-story garage, 80x140.

**Sawyer, Mich.;** Peck & Keith; two-story public garage, 50x80; $7000.

**Elbow Lake, Minn.;** Erick Sletten; one-story public garage, 40x125.

**Floodwood, Minn.;** E. B. Robinson; one-story garage, 48x80; $10,000.

**Minneapolis, Minn.;** L. R. Harrington, 37 S. Sixth street; one-story private garage, 18x18.

**Minneapolis, Minn.;** Harry S. Christian, 1300 Hennepin avenue; three-story public garage, 50x146.

**Minneapolis, Minn.;** A. E. Rydlun, 2528 Hennepin avenue; one-story garage, 62x100.

**Moorhead, Minn.;** Schranz Brothers Auto Co.; one-story garage, 50x140.

**St. Martin, Minn.;** Thelen Brothers; one-story garage, 48x84.

**St. Paul, Minn.;** Gerde Auto Co., 117 E. Lake street, Minneapolis; one-story public garage, 44x114.

**St. Paul, Minn.;** Texas Co., Newton building; one-story garage and storage station; $24,000.

**Atlanta, Mo.;** Atlanta-Overland Co.; one-story garage, 60x80.

**Garden Plain, Mo.;** Fred Abel; one-story garage, 50x100.

**El Dorado Springs, Mo.;** R. B. Rupard; one-story garage, 50x150.

**Kansas City, Mo.;** James McQueeny, 3336-38 Main street; one-story garage; $10,000.

**Lees Summit, Mo.;** William Cave; one-story garage, 65x100.

**St. Louis, Mo.;** M. & O. Automobile Equipment Co.; one-story garage, 45x55; $45,000.

**St. Louis, Mo.;** Bush-Burns Realty Co., 1105 Chestnut street; one-story private garage, 20x22; $1000.

**St. Louis, Mo.;** E. R. Dryden Construction Co., 1105 Chestnut street; one-story public garage, 20x120; $2500.

**Belt, Mont.;** Henry Morrow; one-story garage, 63x72.

**Lewiston, Mont.;** Douch Mfg. Co.; tractor salesroom, 60x100; $8000.

**Roundup, Mont.;** L. G. Madden; one-story garage, 75x140.

**Three Forks, Mont.;** Three Forks Portland Cement Co.; one-story garage; $100,000.

**Benson, Neb.;** Charles T. Olson & Son; one-story garage; $10,000.

**Bloomfield, Neb.;** Gossard & Alderman; one-story garage, 50x140; $20,000.

**Crofton, Neb.;** George Goss; one-story garage, 30x100; $6000.

**Doniphan, Neb.;** W. R. Augustin; one-story garage, 62x140; $10,000.

**Grand Island, Neb.;** Glass & Evans Auto Co.; one-story garage, 66x132; $20,000.

**Gothenburg, Neb.;** C. A. Morell; one-story garage, 70x150.

**Lincoln, Neb.;** Mrs. Sarah B. Gregory; one-story garage, 20x53; $1500.

**Omaha, Neb.;** McCaffrey Motor Co., 10th and Howard streets; one-story garage, 66x132; $25,000.

**Omaha, Neb.;** H. Pelton, 2205 Faraam street; one-story garage, 103x171.

**Omaha, Neb.;** C. D. Sturtevant, 103 N. 53rd street; one-story garage; $8000.

**Omaha, Neb.;** Edward Cackley, 2622-24 N. 16th street; one-story garage, 44x132; $7000.

**Omaha, Neb.;** J. T. Fitzgerald, 16th and Leavenworth streets; one-story garage; $100,000.

**Omaha, Neb.;** T. H. Jones, 1114 Dodge street; one-story garage; $30,000.

**Manchester, N. H.;** Arsene Brunelle, 314 Kelley street; two-story public garage, 30x62; $4000.

**Portsmouth, N. H.;** Julius Goose, 27 Hancock street; one-story public garage, 50x60; $8000.

**Portsmouth, N. H.;** Dr. S. F. A. Pickering, 32 Congress street, and F. E. Brooks, Hampton, N. H.; one-story garage and service station, 50x120; $20,000.

**Camden, N. J.;** Custer & Gree, Third and Market streets; one-story garage and show room, 50x100; $10,000.

**Camden, N. J.;** Custer & Gree, Third and Market streets; one-story garage, 57x133.

**Camden, N. J.;** Custer & Gree, Third and Market streets; two-story garage and salesroom, 53x150; $25,000.

**Glassboro, N. J.;** John Barrett; one-story garage, 60x120; $18,000.

**Haddonfield, N. J.;** W. H. Lammis, 312 Linden street, Camden, N. J.; one-story garage, 21x23; $4000.

**Jersey City, N. J.;** S. Margulies, 21 E. 41st street, Bayonne, N. J.; one-story public garage, 86x100.

**Jersey City, N. J.;** Philip Horwitz, 134 Danforth avenue, 24 one-story garages, 50x130; $7000.

**Madison, N. J.;** W. F. Harris, 133 Fairview avenue, South Orange, N. J.; 1½-story garage, 27x38; $5000.

**Newark, N. J.;** Lum & Lum, Firemen's building; one-story automobile show room and office; $3500. Lessee, Broad Auto Co., 985 Broad street.

**Newark, N. J.;** Marcellino Napolitana, 488½ N. Fifth street; one-story public garage, 27x84.

**Newark, N. J.;** David Galowitz, 35 Fleming avenue; one-story garage, 49x50; $3000.

**Union, N. J.;** Otto Heuer, 321 Lewis street; one-story public garage, 25x100; $5000.

**Brightwater, L. I., N. Y.;** Mrs. R. M. Brewster; 2½-story garage, 28x63; $18,000.

**Brooklyn, N. Y.;** E. M. Adelsohn, 1776 Pitkin avenue; one-story private garage, 15x100; $4000.

**Brooklyn, N. Y.;** Utility Garage Co., Sterling place, east of Washington avenue; one-story garage, 50x131; $16,000.

**Brooklyn, N. Y.;** James Hughes, 694 Myrtle avenue; one-story garage, 25x100; $5000.

**Brooklyn, N. Y.;** Wendel Realty Co., 160 Broadway; one-story garage, 90x100; $20,000.

**Brooklyn, N. Y.;** Willoughby Garage, Inc., 260 Broadway; one-story garage, 100x200; $45,000.

**Brooklyn, N. Y.;** Penwood Realty Co., Inc., 280 Broadway; one-story garage, 100x125; $20,000.

**Brooklyn, N. Y.;** Joseph De Vito, 185 Gold street; one-story garage, 32x55; $3000.

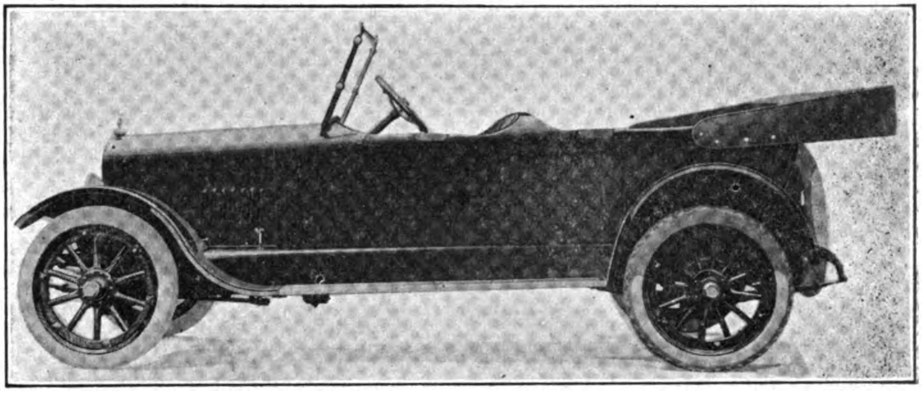
**Brooklyn, N. Y.;** Robert S. Nelson, 280 Park avenue; one-story garage, 200x84; $60,000.

**Brooklyn, N. Y.;** William De Goode, 215 Montague street; four-story garage, 80x70.

**Brooklyn, N. Y.;** Marguerite McLaughlin, 343 76th street; three-story garage and storage station, 60x100; $12,000.

**Brooklyn, N. Y.;** Mrs. Sarah Leibert, 44 Court street; two-story private garage, 50x80; $20,000.

# Sayers Now Producing Light Six



**The Sayers Six-Cylinder Model, Made by Sayers & Scovill Co., Cincinnati, O. Mechanical Description in the Automobile Journal, Aug. 25, 1917. This Car Sells at $1295.**

**SAYERS LIGHT SIX SPECIFICATIONS.**

**Engine, Continental L, six-cylinder removable heads.**
**Bore and stroke, 3½x4½.**
**Horsepower, 25.35 (S. A. E. rating).**
**Clutch, Borg & Beck, three-plate dry disc.**
**Cooling system, pump.**
**Ignition, Delco, with storage battery.**
**Starting and lighting, Delco two-unit.**
**Gasoline feed, Stewart vacuum.**
**Transmission,**
**Drive, through springs, Hotchkiss system.**
**Front axle, drop forged I beam.**
**Rear axle, floating.**
**Springs, semi-elliptic front, long semi-elliptic rear.**
**Wheels, artillery type, demountable rims.**
**Tires, 32x4.**

**Brooklyn, N. Y.;** William Dugan, 573 Hart street; one-story garage, 50x95; $10,000.

**Brooklyn, N. Y.;** Isaac H. Kramer, 115 Broadway, New York; two-story garage, 96x100; $10,000.

**Brooklyn, N. Y.;** Joshua Hornecke, 47 Schenectady avenue; one-story garage, 25x100; $4000.

**Brooklyn, N. Y.;** F. Kelly; one-story garage, 164x126.

**Brooklyn, N. Y.;** Estate George Seef, 6812 Third avenue; one-story garage, 36x100; $5000.

**Brooklyn, N. Y.;** Charles W. Foster, 371 Pacific street; one-story garage, 25x90; $4500.

**Buffalo, N. Y.;** Washington B. French, 734 Marine Bank building; one-story garage, 19x141; $6000.

**College Point, L. I., N. Y.;** College Point Garage, Inc.; two-story garage, 50x100; $8000.

**Chateaugay, N. Y.;** Clarence W. Sprague, 120 Broadway, New York; three-story public garage, 50x150.

**Elmhurst, L. I., N. Y.;** Ernest Probst; one-story garage, 18x100; $2500.

**New York, N. Y.;** Thomas F. Devina, 65th street and West End avenue; one-story garage, 100x101.

**New York, N. Y.;** J. M. Felson, 105 108th street; one-story garage; $5000.

**New York, N. Y.;** F. A. Cella, 102 W. 50th street; one-story garage; $35,000.

**New York, N. Y.;** Edward F. Branning, 177th street and Sedgwick avenue; one-story garage; $20,000.

**New York, N. Y.;** L. K. Schwartz, 219-23 W. 77th street; one-story garage, 75x100.

**New York, N. Y.;** Robert Ferguson, 52 Jackson avenue; one-story garage, 50x200; $20,000.

**New York, N. Y.;** James McLaughlin, 28 W. 144th street; one-story garage, 50x99; $8000.

**New York, N. Y.;** Judge E. R. Finch, 21 E. 84th street; two-story garage, 110x110.

**New York, N. Y.;** J. U. Brookman estate; one-story garage, 92x113; $22,000.

**New York, N. Y.;** Russo Jodice Realty Co., care Giovani Russo, 2364 Lorillard place; one-story garage, 85x100; $18,000.

**New York, N. Y.;** Nesti Construction Co., 658 E. 189th street; one-story garage, 175x100; $15,000.

**New York, N. Y.;** M. J. Harrison, 63 Park Row; one-story garage, 100x100.

**New York, N. Y.;** Charles Hensle, 3879 10th avenue; seven-story garage, 50x200.

**New York, N. Y.;** J. M. R. Realty Co., 30 E. 42nd street; one-story garage, 100x200; $40,000.

**New York, N. Y.;** William Hutton, 68 Northern avenue; two-story garage, 25x119; $8000.

**New York, N. Y.;** Charles A. Eberhardt, 413 E. 137th street; one-story garage, 118x160; $25,000.

**New York, N. Y.;** Newar Realty Co., 200 Broadway; one-story garage, 98x100; $16,000.

**New York, N. Y.;** Swift & Co., First avenue and 45th street; five-story garage, 50x100.

**New York, N. Y.;** Klein & Jacobs, 4307 Broadway; one-story garage, 50x100; $10,000.

**New York, N. Y.;** Fred Wilkening, 224 E. 24th street; three-story garage; $12,000.

**Ozone Park, L. I., N. Y.;** John B. Reimer; one-story garage, 30x105; $4500.

**Portchester, N. Y.;** Jacob Brothers; one-story garage, 25x25; $3000.

**South New Berlin, N. Y.;** A. B. Dixson and L. E. Bennett; one-story public garage, 30x70; $5000.

**Southampton, L. I., N. Y.;** Charles A. Sabin, 140 Broadway, New York; two-story private garage and chauffeurs' quarters, 80x60; $25,000.

**Syracuse, N. Y.;** William D. Hawley, 400 James street; one-story garage; $3000.

**Woodhaven, L. I., N. Y.;** Adam Ludwig, 828 Boyd avenue; two one-story garages, 17x100; $3000.

**Akron, O.;** Northern Ohio Traction and Light Co., Hamilton building; one-story garage, 44x175; $80,000.

**Bucyrus, O.;** Roberts & Kennedy; one-story public garage, 54x140.

**Cheviot, O.;** R. A. Powell; one-story garage, 60x100.

**Cincinnati, O.;** East Walnut Hills Garage Co., Grandin road and Freeland avenue; one-story garage; $40,000.

**Cincinnati, O.;** Republic Motor Truck Co.; salesroom, 75x110.

**Cincinnati, O.;** R. K. Le Blond, 4709 Eastern avenue; three-story commercial garage, 192x60; $50,000.

**Cincinnati, O.;** John C. Rogers, 605 Johnston building; two-story garage, 50x90; $20,000.

**Cincinnati, O.;** Meyers Y. Cooper, Union Trust building; one-story private garage, 12x16; $1200.

**Cincinnati, O.;** Anton Rieg, 2554 Vine street; one-story garage, 25x56; $10,000.

**Cleveland, O.;** F. H. Kelman, 3550 Scranton avenue; service station, 50x130; $8000.

**Cleveland, O.;** Straus & Uberstine, 915 Lakeview road, N. E.; one-story garage; $15,000.

**Cleveland, O.;** J. A. Zucker; one-story garage; $50,000.

**Cleveland, O.;** Barbel & Kiss, 5425 Detroit avenue; one-story garage; $15,000.

**Cleveland, O.;** Benjamin Farr Co., 2169 E. Ninth street; one-story salesroom and storage station; $110,000.

**Dennison, O.;** Frederick Rufenacht, New Philadelphia, O.; one-story public garage, 62x125; $8000.

**Georgetown, O.;** Albert Pohl & Sons; one-story garage, 175x100.

**Carnegie, Okla.;** Breckenridge & Kelly; one-story garage, 130x50; $5000.

**Elk City, Okla.;** Hedlund & Son; one-story garage, 75x140.

**Erick, Okla.;** E. A. Lewis; one-story garage, 80x50.

**Hennessey, Okla.;** E. P. Munch; one-story garage, 50x130.

**Nowata, Okla.;** Hollis Brothers; one-story garage, 75x100; $10,000.

**Oklahoma City, Okla.;** McClelland, Gentry Motor Co.; three-story garage, 80x140.

**Okmulgee, Okla.;** X. R. Gill; two-story garage, 80x120.

**Pawnee, Okla.;** Mentzer Brothers; one-story garage, 35x150.

**Tulsa, Okla.;** G. N. Wright, Box 1178; one-story garage and salesroom on Main street for Ford cars.

**Portland, Ore.;** J. McClelland, 365 Second street; one-story garage; $4500.

**Allentown, Penn.;** M. J. Reinhard, 612 Washington street; one-story garage; $3000.

**Altoona, Penn.;** D. G. Puderbaugh; Hutchinson building; four-story commercial garage, 65x123; $85,000.

**Bethlehem, Penn.;** Miss Iva Kraus; one-story garage, 25x25; $2000.

**Philadelphia, Penn.;** E. M. Flood; one-story garage, 35x75, at 22nd and Summer streets.

**Philadelphia, Penn.;** Amos W. Barnes; one-story garage, 30x100; at 2623-25 Huntingdon street.

**Philadelphia, Penn.;** Squire Dugdale, 4540 Mulberry street; one-story garage, 69x98.

**Philadelphia, Penn.;** K. Levin, 431 Lombard street; two-story garage, 60x70; $5000.

**Philadelphia, Penn.;** George Crolowitz, rear 326 South street; one-story garage and storage station, 22x60; $8000.

**Philadelphia, Penn.;** H. Perloff, 1516 Lindley avenue; one-story garage, 31x26; $2300.

**Philadelphia, Penn.;** F. De Berardino, 6328 Vine street; one-story garage, 16x24; $2000.

**Pittsburgh, Penn.;** Point Motor Sales Co., 56 Water street; three-story garage, 110x45.

**Pittsburgh, Penn.;** Empire Laundry Co., 2229 Carson street; one-story garage, 26x75.

**Pittsburgh, Penn.;** Robert K. Boyer, 334 Sylvania avenue; one-story commercial garage, 46x100.

**Rottertown, Penn.;** William P. Young & Son; one-story garage; $25,000.

**Williamsport, Penn.;** D. S. Andrus & Co., 135 W. Third street; one-story garage, 40x50; $6000.

**York, Penn.;** J. W. Richley Automobile Co.; commercial garage; $100,000.

**Little Compton, R. I.;** Charles M. Bullard, Adamsville, R. I.; one and two-story garage, 40x70; $3000.

**Providence, R. I.;** William Fletcher, 513 Industrial Trust building; commercial garage; $20,000.

**Providence, R. I.;** Pugh Brothers, 53 Mathewson street; one-story garage, 50x125; $25,000.

**Woonsocket, R. I.;** Choquette & Gagnon; one-story public garage, 50x60; $5000.

**Sioux Falls, S. D.;** T. G. Edmison, 322 S. Phillips avenue; one-story garage, 47x122.

**Eagle Pass, Tex.;** Sterling Auto Sales Co.; one-story garage, 75x150; $10,000.

**El Paso, Tex.;** J. F. Goebel; Montana and Florence streets; commercial garage; $10,000.

**Port Arthur, Tex.;** T. E. Linn, Proctor street and Atlanta avenue; commercial garage; $32,000.

**San Antonio, Tex.;** Clem Motor Car Co., Eighth street and Avenue C; one-story garage; $18,000.

**Stephenville, Tex.;** Model Garage; commercial garage, 104x104.

**Petersburg, Va.;** U. P. Atkinson & Co., 119 W. Tabb street; two-story garage, 50x70; $10,000.

**Portsmouth, Va.;** J. E. Jacobson; one-story garage; $6000.

**Richmond, Va.;** Davis Brothers, 2510 W. Main street; four one-story garages, 50x19; $1200.

**Richmond, Va.;** P. J. Beattie, Davis avenue and Dance street; one-story garage; $4000.

**Centralia, Wash.;** St. John & Titus; one-story garage; $3000.

**Kelso, Wash.;** C. A. Peters; one-story garage, 75x100.

**Spokane, Wash.;** John Doran Co., Third avenue and Wall street; $25,000.

**Huntington, W. Va.;** H. A. Robson, R. & P. building; one-story garage, 40x100.

**Chippewa Falls, Wis.;** F. A. Bigler; two-story garage, 132x125; $40,000.

**Elkhart Lake, Wis.;** W. Reenick; one-story garage, 20x20.

**Lake Mills, Wis.;** Lake Mills Auto Co.; one-story garage, 60x120; $10,000.

**Manitowoc, Wis.;** William F. Hagen & Co., 713 Jay street; one-story garage, 50x150.

**Marion, Wis.;** L. J. Fellenz, 80 S. Main street, Fond du Lac, Wis.; one-story garage and repair shop, 53x104; $10,000.

**Milwaukee, Wis.;** Modern Motor Co., 24th and State streets; one-story garage; $8000.

**Milwaukee, Wis.;** Charles Uecker, 12th and Walnut streets; one-story garage; $1700.

**Milwaukee, Wis.;** Herman Bruns, 845 26th street; one-story private garage, 22x16; $1000.

**Milwaukee, Wis.;** H. J. Rotier, 811 Goldsmith building; one-story garage, 20x40; $2000.

**Milwaukee, Wis.;** J. K. Ilsley; one-story private garage, 23x25; $2000.

**Oconomowoc, Wis.;** F. W. Leaf, 411 Summit street; one-story garage, 66x126.

**West Allis, Wis.;** Otto Conrad, 5524 National avenue; one-story garage, 100x150.

# CONTRACTS RECENTLY AWARDED

## Garage and Service Station Constructions That Are Now Under Way or Soon Will Be

**Denver, Col.;** Brown Contracting Co., 2433 14th street; one-story garage, 75x125; for Hallack Investment Co.; $8000.

**Denver, Col.;** I. L. Martz, 2037 E. 25th street; two-story garage, 25x37; for R. D. Brooks; $7500.

**Hartford, Conn.;** J. H. Crozier Co., 721 Main street; one-story garage, 55x140; for Hartford Rubber Works, 691 Park street.

**New Haven, Conn.;** Joseph Skolnick, 159 Columbus avenue; one-story public garage, 25x25; for Philip Freedman, 220 Cedar street.

**New Haven, Conn.;** J. J. Milo, 157 Wooster street; one-story public garage, 47x40x25; for J. J. Carpenter, 70 Hill street; $2500.

**Lake Wales, Fla.;** J. F. Townsend; one-story brick garage; concrete floors and steel rolling doors; for C. L. Johnson; $8000. Lessee, Wetmore Brothers & Peltier.

**Aurora, Ill.;** M. Williams; one-story garage, 75x165; $15,000.

**Chicago, Ill.;** Thomas Barrett, 6116 Ingleside avenue; one-story public garage, 56x115 and 55x155; $25,000.

**Chicago, Ill.;** B. & W. Construction Co., 10 S. La Salle street; one-story garage, 65x125; for Walter J. Goldy, 4743 N. Albany avenue.

**Taylorville, Ill.;** R. M. Kennedy; one-story garage, 46x132; for John B. Colegrove; $6000.

**Indianapolis, Ind.;** J. N. Porter, 3015 N. Senate street; one-story public garage, 200x40; for Frederick A. Clark, 184 N. Meridian street; $2000.

**Union City, Ind.;** John Wallace; one-story garage; $7000.

**Stacyville, Ia.;** C. H. Werner, Syndicate building, Waterloo, Ia.; one-story public garage, 55x80; for John Weber; $6000.

**Washington, Ia.;** E. P. Foss, 603 E. Washington street; one-story garage, 60x66, $5000.

**Wichita, Kan.;** G. G. Bond, 227 E. Douglas street; three-story garage, 62x137; for T. B. Richardson, 214 N. Lawrence street; $40,000.

**Machais, Me.;** A. R. Gibson; one-story private garage; for Charles Dinsmore and D. C. Getchell; $10,000.

**Boston. Mass.;** F. A. Bruce, 136 Curtis street, West Somerville, Mass.; two-story public garage, 70x90; for Margaret Craddock, 7 Monument square; $40,000.

**Fall River, Mass.;** Arthur C. LeClair, 1233 S. Main street; one-story garage, 48x56; for Philias Matton, 438 E. Main street; $3000.

**New Bedford, Mass.;** John Sykes, 19 Collins street; one-story public garage, 50x71; for Samuel T. Lee, 299 Summer street; $7000.

**New Bedford, Mass.;** N. J. Fournier, 375 Second street; one-story public garage, 45x89; for David Methe, 223 State street; $6500.

**Somerville, Mass.;** Walsh Brothers, Cambridge, Mass.; one-story garage, 80x110; for James P. O'Neill, 62 Webster avenue; $12,000.

**Watertown, Mass.;** A. P. Fraser, 37 Union street; one-story garage, 75x84x91; $13,000.

**Detroit, Mich.;** Leonard Construction Co., 332 S. Michigan avenue, Chicago, distributing station, including office building, power house, garage, machine shop and barrel house; for Sinclair Refining Co., 111 W. Washington street.

**Marquette, Mich.;** W. G. Miller, 908 Front street; three-story private garage, 24x40; for L. G. Kaufman, Michigan and Cedar streets; $3500.

**Marquette, Mich.;** Charles Van Iderstein; one-story private garage, 20x24; for J. M. Longyear, Jr.; $3000.

**Edina, Mo.;** J. B. Barworth; one-story garage, 74x125; for Delaney Brothers; $10,000.

**St. Louis, Mo.;** Francis-Wyland Construction Co., 400 De Balvere avenue, one-story garage and salesroom, 65x128; for Mitchell Auto Co., 3308 Lindell boulevard; $18,000.

**Camden, N. J.;** B. F. Harvey, 1192 Haddon avenue; one-story garage, 20x20; for E. Foster and W. Band, 1451-53 Bellevue avenue; $1500.

**Camden, N. J.;** Mockett Construction Co., Sixth and Market streets; one and two-story garage, 39x70; $4000.

**Camden, N. J.;** P. F. Harvey, 1192 Haddon avenue; one-story garage and storage station, 17x40; for Walter Sage, 331 Arch street; $2500.

**Haddonfield, N. J.;** William Congeaser, Haddon Heights, N. J.; one-story garage, 20x24; for Elias Davis, Camden National Bank building, Camden, N. J.; $3500.

**Buffalo, N. Y.;** Theodore P. Wagner, 233 Loring avenue; one-story public garage, 46x46; for William Wilkeson; $5000.

**New York, N. Y.;** J. F. Collins; one-story garage, 80x100; for Watford-Etz Coal Co.; $10,000.

**Oneida, N. Y.;** Joseph Fazio; one-story private garage, 20x34; for Hinman Milk Machine Co.; $4000.

**Schenectady, N. Y.;** Du Bois Bennett, 413 McClellan street; one-story garage for American Locomotive Co.; $4500.

**Akron, O.;** Mohawk Rubber Co., 1231 Second street; two-story public garage, 60x58 and 26x32; $18,000.

**Cleveland, O.;** James Teresi, 1123 Orange avenue; one-story public garage for S. Marcelline, 2225 Allen avenue; $8000.

**Cleveland, O.;** Minnick, Gibbons Co., 5309 Prospect avenue; one-story garage, 19x110; for Aluminum Castings Co., 6200 Carnegie avenue; $3000.

**Elyria, O.;** James A. Hewitt, Masonic Temple; one-story garage, 30x66; for Elyria Telephone Co.; $3000.

**Philadelphia, Penn.;** Frank K. Stahl, 2713 Park avenue; one-story garage, 28x45; for Charles Thompson, southeast corner 13th and Rush streets; $2250.

**Philadelphia, Penn.;** T. S. Johnson Son Co.; one-story iron on iron frame garage, 17.6x20 at 132 Colona street; for Dr. E. H. Mentzer; $550.

**Philadelphia, Penn.;** L. Davis, 13th and Nedro streets; one-story garage and shop, 20x68; for J. & G. Sutton, Chelton avenue and Beechwood street; $2500.

**Philadelphia, Penn.;** J. Jones; one-story brick garage, 20x50; north side Cumberland street, west of Broad street; for Anna McCracken· $1500.

**Philadelphia, Penn.;** John Schuster; one-story stone garage, 22x32, at 1011 17th avenue, Oak lane; for George Livingston; $1200.

**Philadelphia, Penn.;** Edward H. Reuss, Jr.; one-story stone garage, 20x23; at 5058 Wynnefield avenue; $1000.

**Philadelphia, Penn.;** William Gilbert; one-story brick garage, 16x30; rear 540 N. 52nd street; for Joseph Schroder; $650.

**Philadelphia, Penn.;** Herman Voigt; one-story brick garage, 40x165; at 2120-22 Fairmount avenue; for William Meyers; $12,000.

**Philadelphia, Penn.;** Ernest Bickershoff, 5153 Walnut street; one-story garage and shop, 34x90; for John J. Grogan, 4921 Race street; $4500.

**Philadelphia, Penn.;** F. Pexillo, 3347 Almond street; one-story garage, 20x90; for John Williams, 2570 Westmoreland street; $1850.

**Philadelphia, Penn.;** C. E. Lloyd, Jr.; one-story garage; stone and brick, 12x19; at 6403 North Sixth street; for M. E. Morton; $500.

**Philadelphia, Penn.;** Robert Killough; one-story stone garage, 13x21; rear 519 Pelham road; $600.

**Philadelphia, Penn.;** Henry P. Schneider; one-story garage, 66x182.5; west side Fourth street, below Spruce; $21,000.

**Philadelphia, Penn.;** Thomas Duffey, 302 N. Frazier street; one-story garage, 75x150; for Charles Duffey and A. W. King; $10,000.

**Philadelphia, Penn.;** Samuel R. Edge. 5014 Willows avenue; one-story garage, 18x135; for W. E. Gaunt, 54th street and Woodland avenue; $3000.

**Philadelphia, Penn.;** W. C. Wethersein; one-story stone garage, 33x32; east side Nash street, northwest of Cliveden avenue; $500.

**Philadelphia, Penn.;** E. R. Clark Co.: one-story brick garage, 35x38; at 5116 Ridge avenue; for Ernest Wilby; $1975.

**Philadelphia, Penn.;** I. Schulman; one-story brick garage, 16.9x26; at 5636 Chestnut street; for E. Schuster; $600.

**Philadelphia, Penn.;** Samuel B. MacDowell & Son; one-story stone garage, 18x24; at 6808 Lincoln drive; for E. Robert Cox; $1670.

**Philadelphia, Penn.;** M. J. Walsh, 6733 Emlen street; one-story garage, 134x95; for J. Russell Walsh, 6773 Emlen street; $15,000.

**Philadelphia, Penn.;** E. M. Harris; one-story brick garage, 147.3x100; northwest corner 22nd and Arch streets; $25,000.

**Philadelphia, Penn.;** C. Bonner; one-story brick garage, 15x20; north side Wishart street, east of Ella street; for John Hand; $500.

**Philadelphia, Penn.;** A. Raymond Raff Co.; two-story tile garage, 21.4x26, with rear building 5x17; south side Oaklane, east of 10th street; for Frank Ford; $2500.

**Philadelphia, Penn.;** Michael Dwan; one-story stone garage, 20x20; at 4100 Manayunk avenue; $500.

**Philadelphia, Penn.;** Alfonso Verdi; one-story brick garage, 14x18; southwest corner 60th and Jefferson streets; for Mrs. Elizabeth Bins; $550.

**Philadelphia, Penn.;** Charles Y. Scully; one-story brick garage, 21x90; rear 5317 Germantown avenue; $3000.

**Philadelphia, Penn.;** Lewis Ahlers; one-story brick garage, 17.6x30; at 4468 Edgemont street; for Matthew Karpinski; $850.

**Philadelphia, Penn.;** Ferdinand Pezzillo; one-story brick garage, 10.5x90; northwest corner Almond and Westmoreland streets; for John Williams; $1850.

**Philadelphia, Penn.;** A. S. Tourison, Jr.; two-story stone garage, 21.6x26; southwest corner Sedgwick and Crittenden streets; for A. L. Tourison; $2200.

**Philadelphia, Penn.;** Joseph R. Smith; one-story concrete garage, 60x238.6; southeast corner Columbia avenue and Patton street; for Columbia Garage Co.; $20,000.

**Philadelphia, Penn.;** John Frendley; one-story brick garage, 19x21; at 709 Addison street; $500.

**Philadelphia, Penn.;** Lester M. Shestack; one-story brick garage, 40x103; at 1509-11 Germantown avenue; for Harry H. Katz; $5000.

**Philadelphia, Penn.;** J. W. Peoples; one-story brick garage, 50x215; south side Chestnut street, west of 48th street; $16,000.

**Pittsburgh, Penn.;** E. W. Babcock; two-story private garage, 27x40; $7500.

**Pittsburgh, Penn.;** Paul Auel, 93 S. 24th street; two-story public garage, 75x60; for Frank E. Koegler, 1320 Carson street; $30,000.

**Pittsburgh, Penn.;** Snyder Engineering Co., Empire building; one-story garage, 27x20; $1250.

**Pittsburgh Penn.;** C. W. Klicker, 105 Moniter street; Ben Avon, Penn.; one-story private garage, 12x22; for J. S. McLean, 1427 Liberty avenue, Pittsburgh; $1800.

**Pawtucket, R. I.;** Benjamin Fox, Inc., 15 Exchange street, Boston; one and two-story garage, 30x88; for Standard Oil Co. of New York, 50 Congress street, Boston.

**Providence, R. I.;** C. I. Bigney Construction Co., 898 Westminster street; three-story public garage, 100x280; for J. A. Foster, 69 Dorrance street; $150,000.

**Woonsocket, R. I.;** David Gobielle; one-story public garage, 80x100 and 20x30; for Arthur Decelles, 350 Clinton street; $12,000.

**Greenville, S. C.;** Skelton & Owings; two-story garage on S. Main street; $6500. Lessee, Dixie Auto Co.

**Brandt, S. D.;** T. O. Thorsen; one-story public garage, 50x70; $10,000.

**Richmond, Va.;** E. L. Bass & Brothers, 708 Bainbridge street; one-story garage, 24x80; for American Tobacco Co., care of D. C. Watkins, 288 Cary street; $5000.

**West Allis, Wis.;** R. L. Riesenger & Co., 1327 First National Bank building; one-story garage, 20x72; for Davis Manufacturing Co., 57th avenue and Mitchell street; $1000.

## Alterations, Improvements and Additions.

**Muncie, Ind.;** The T. W. Warner Co. is building a one-story addition to its present plant.

**Hawarden, Ia.;** Fritz Leafstedt will erect an addition to his garage, the dimensions of which will be 50 by 30 feet.

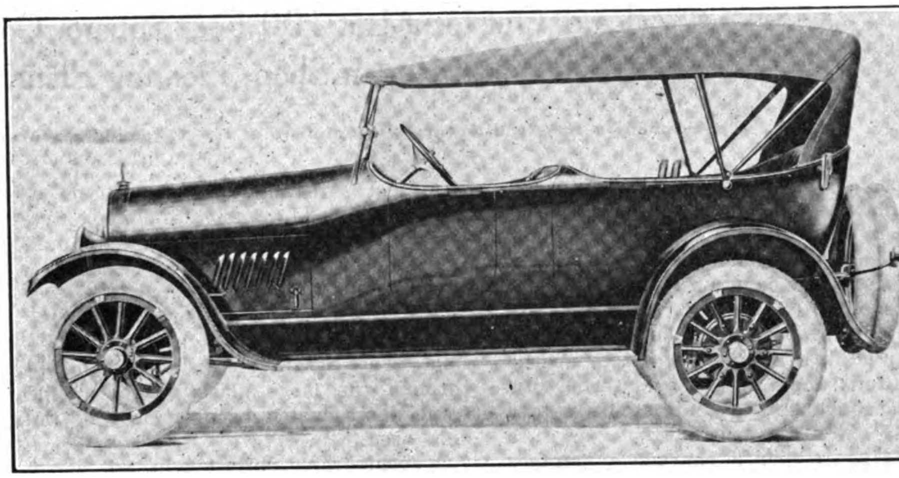
**Storm Lake, Ia.;** The Brader Auto Co. is planning to enlarge its present quarters by the building of a large addition.

**Bessie, Okla.;** Alfred Gerlach, who owns an automobile salesroom at Cordell, has purchased the adjacent building and will remodel the entire site into a garage.

**Indiana, Penn.;** The Indiana Motor Co., Eighth street, will erect an addition 60 by 100 feet.

**Johnstown, Penn.;** Masters Tire Service, Conemaugh and Walnut streets, have obtained additional floor space. This was made necessary on account of the growing business.

# *Westcott Series 18 Touring Car*



**Made by the Westcott Motor Car Co., Springfield, O., Showing Full Streamline Body and Double Cowl. Mechanical Description and Details in the Automobile Journal, Aug. 25, 1917.**

**Engine, six-cylinder, L head.**
**Bore and stroke, 3½x5¼.**
**Horsepower, 29.40 (S. A. E. rating).**
**Carburetor, Rayfield bolted to cylinder.**
**Gasoline feed, Stewart vacuum.**
**Ignition, Delco from storage battery.**
**Starting and lighting, Delco two-unit.**
**Transmission, sliding gear, selective, three speed and reverse.**
**Cooling system, pump.**
**Oiling system, force feed and splash.**
**Front axle, Timken I beam.**
**Rear axle, Timken semi-floating.**
**Springs, cantilever.**
**Tires, 35x4½ straight side.**
**Wheelbase, 125 inches.**
**Price, $1790.**

**Monessen, Penn.;** C. B. McAllister, the Ford automobile dealer of East Maiden street, has decided to enlarge his garage.

## Garages and Repair Shops In New Buildings

**Roberts, Ga.;** Williams & Walker are planning the erection of a garage.

**Lewiston, Ida.;** R. L. Spiker is building a 59 by 177 foot garage.

**Twin Falls, Ida.;** The Utah-Idaho Motor Co. is planning the erection of a large modern garage, the dimensions of which are 50 by 125 feet.

**Galesburg, Ill.;** Galesburg Machine Works will erect a $50,000 garage at Seminary and Tompkins streets.

**Glava, Ill.;** The Glava Motor Co., Market street, is erecting an up-to-date garage, 84 by 100 feet.

**Quincy, Ill.;** The Standard Oil Co. will build a brick garage and service station on 12th and Hampshire streets. The garage will be 40 by 60 feet and the service station will be 18 by 20 feet.

**Marshalltown, Ia.;** Harris & Evers are planning the erection of a large new garage.

**Mason City, Ia.;** Mason City Auto Wrecking Co. will build a garage.

**Adrian, Mich.;** Frank McKinster & Co. will open a new up-to-date garage on North Main street. The building will be 40 by 80 feet, the front to be used for an office and salesroom for all kinds of supplies and accessories and the upper floor for the storage of tires and supplies.

**Grand Rapids, Mich.;** M. P. Bromeling has started the erection of a large garage and Ford sales station at North Main street. The garage will be one of the largest in the section.

**Minneapolis, Minn.;** A. E. Rydlun is building a 62 by 100 foot garage at 2528 Hennepin avenue.

**St. Martin, Minn.;** Thelen Brothers is erecting a large garage.

**Princeton, Minn.;** J. H. Hoffman will open a service station.

**New York, N. Y.;** Hugh McLernon is planning the erection of a one-story brick garage to measure 100 by 100 feet, at Harlem River Terrace.

**Cincinnati, O.;** Zumstein Taxicab Co. will erect a $80,000 garage. The company deals in automobiles.

**East Liverpool, O.;** The Liberty Motor Sales Co. is planning to erect a modern garage.

**Philadelphia, Penn.;** The White Co. will erect a large and complete service station at Hunting Park and Erie avenues. The building will be 300 by 279 feet and will contain 2000 square feet of floor space.

**Middleton, Tenn.;** Frank Richardson will open a garage.

**Seattle, Wash.;** The Sunset Motor Co. will have a new four-story terra cotta building on the northeast corner of East Pike street and 12th avenue. The company has the local agency for Cadillac and Hupmobile cars.

**Spokane, Wash.;** The Culton-Moylan-Reilly Auto Co. is erecting an $8500 garage.

**Peshtigo, Wis.;** Henry Behiens is building a new modern garage which will be 98 by 48 feet.

**Bridgeport, Conn.;** F. A. Arch Cooper has prepared plans for the erection of a new garage building on State street for A. Faitsison, 146 Pembroke street. It will be one story, 100 by 56 feet.

**Chicago, Ill.;** Charles Bowsher, 1420 E. 64th street, will have a one-story brick garage erected at 1427 E. 64th street, to cost $5000.

**New Bedford, Mass.;** William A. Carroll is erecting a cement block garage on the west side of Tremont street, north of Arnold street.

**Detroit, Mich.;** Johns Brothers is building a garage and auto service station on East Gratiot avenue. It will be one of the most up-to-date garage and service stations in the city.

**New York, N. Y.;** The Fifth Avenue Coach Co. will build a garage to represent $1,000,000 on the block bounded by Broadway, Riverside Drive, 132nd and 133rd streets. It will be conducted by J. C. McGuire & Co.

**Columbus, O.;** The Broad Street Realty Co., Huntington Bank building, will have a one-story brick garage erected at 306 Capitol street to cost $8000.

**Coleman, Tex.;** Martin Reo Sales Co. will erect a fine garage building. It will be fireproof, 60 by 120 feet, and will cost $5000 to $7000.

# COMMUNITY GARAGE OF FOURTEEN STALLS

## Laid Out for a Lot 100 Feet Square, Containing a Court Yard, Repair Shop, Heating Plant and Stores

**Designed by the Architectural Department of the Automobile Journal Publishing Co.**

Garages as real estate investments are at present one of the most active features in the realty field. There are many lots in some neighborhoods where the modern type of community garage can be erected with the certainty of its proving a paying proposition. The automobile owner is always ready to pay for accommodations and any garage offering him extra conveniences and facilities can usually gain the patronage even at a higher figure than is charged by garages where only necessary quarters are furnished.

Such a garage of the community type as shown in the accompanying plate is designed for the average city neighborhood and to front on a street where there is considerable traffic in order to rent the two stores advantageously.

The garage is laid out for a lot 100 feet square and contains a large court yard in the centre 56x63 feet, affording ample room for manouvering the cars about before running them in the stalls or repair shop. Two stores flank the main entrance and the rear corners are occupied by a boiler room and repair shop, the latter being equipped with drain, two pits, sink, work bench and closets. If the location is proper the owner may conduct one of the stores as an automobile supply station or agency and operate the repair shop as a side line.

In all there are 14 stalls, or compartments, each a private garage in itself, complete in every detail. The stalls are ample in size to house the largest of touring cars, being 10 feet wide and 20 feet deep. Each compartment is equipped with a steam heater and electric lights and running water with bowl is provided. All the conveniences are provided and maintained by the owner and are covered in the monthly rental.

The boiler room is designed for a plant to heat the entire structure. It leads from a small vestibule, which also opens into small janitor's room containing a set bowl and toilet. If the owner desires to have a large cellar for storage provision is made for three stairways leading off the stores and boiler room.

The main structure is of brick, tile and terra cotta construction. The party walls and curtain walls are of common brick, as they are not exposed to view on the outside. Tile and terra cotta are used in the front elevation, backed up with brick. Brick may be substituted for the terra cotta and the same effect obtained.

Foundations should be made of good concrete, sufficiently large to support the superstructure, for which this department will furnish specifications and formulas upon application.

A roof of tar and gravel is considered the most satisfactory for this type of building, a good combination being five-ply tar and gravel. Lead flashing should be used or toncan metal, if builder desires to go to the extra expense.

A large skylight with ventilator in the top furnishes efficient light and ventilation. The lighting effect is also aided through the large glass panels in the front doors which occupy most of the door area.

A considerable variation in the cost of a garage of this type will be found owing to the difference in ground rents, labor and cost of materials in various sections of the country. The garage could be erected under average conditions for from $10,000 to $15,000.

The income from such an investment, however, would depend largely on location and management.

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### A. K. HEBNER EXPLAINS BEARINGS SERVICE PLAN.

A. K. Hebner, general manager of the Bearings Service Co., Detroit, Mich., has issued a comprehensive statement of the nature of the company's business in order to dissipate misconceptions in the public mind regarding it.

"Some people have the idea that we operate a garage and do repair work on bearings," says Mr. Hebner. "The function of our service, however, is quite different. We do no work on cars whatever, nor do we renew or regrind bearings. We act as a source of supply where garage men, automobile dealers and motorists may secure any type or size of bearings which they may need in making bearing replacements in motor cars, motor trucks or other motor vehicles. The bearings we sell are a strictly new product, shipped to us direct from the factories where they are made and we sell them under a factory guarantee.

"This service is of a more technical nature than at first glance appears, due to the fact that there are no two makes of motor cars in which the bearings are exactly alike. This necessitates our having on hand complete data covering the bearing specifications in motor cars of every make and model, as well as keeping in stock at each of our 22 branches thousands of different kinds and sizes of bearings so that we can supply every possible demand without a moment's delay. When a garage man or motorist wants a bearing all he has to tell us is the name, year and model of the car for which it is required and the bearing location. Our detailed records then enable us to furnish the proper bearing for the installation with absolute accuracy. These records are being added to daily by information received from the bearing manufacturers. There are, of course, other places where bearings may be obtained, but generally at these places they are sold merely " by the pound," as it were, technical information as to the proper bearing to use not being available. We render the buyer a distinct service, therefore, entirely aside from the mere act of selling.

"We maintain branches at the present time in 22 of the principal cities of the country. At each of these branches we carry in stock complete assortments of the three leading types of automobile bearings, Timken, Hyatt and New Departure. Our stocks include not only bearings of the type used in automobiles of present-day manufacture, but of antiquated models and orphan cars as well. Our company being the sole service representative of the manufacturers mentioned above is naturally working in close co-operation with these manufacturers all of the time. In dealing with us, therefore, the dealer, garage man or motorist is practically dealing with the manufacturers themselves."

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### EMPIRE ENTERS NINTH YEAR OF BUSINESS.

The Empire Automobile Co., Indianapolis, Ind., completed its eighth year in business on Sept. 1 and in each succeeding year of that time has shown a steady growth. The company never attempted production on a big quantity scale, but has adhered closely to the policy of quality first and last in production, which has been responsible for its steady and healthy expansion.

Although the year just closed witnessed the largest production of Empire models ever attempted, the company enters the new year without a single model on hand or in the warehouses. Both the four and six-cylinder Empire models are steadily gaining in popularity.

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### R. R. POTTER ENGINEER WITH FULLER & SONS.

R. R. Potter has been appointed engineer of production of the Fuller & Sons Mfg. Co., Kalamazoo, Mich., and will have charge of all the engineering work incident to production. William Mitchell has been appointed production manager.

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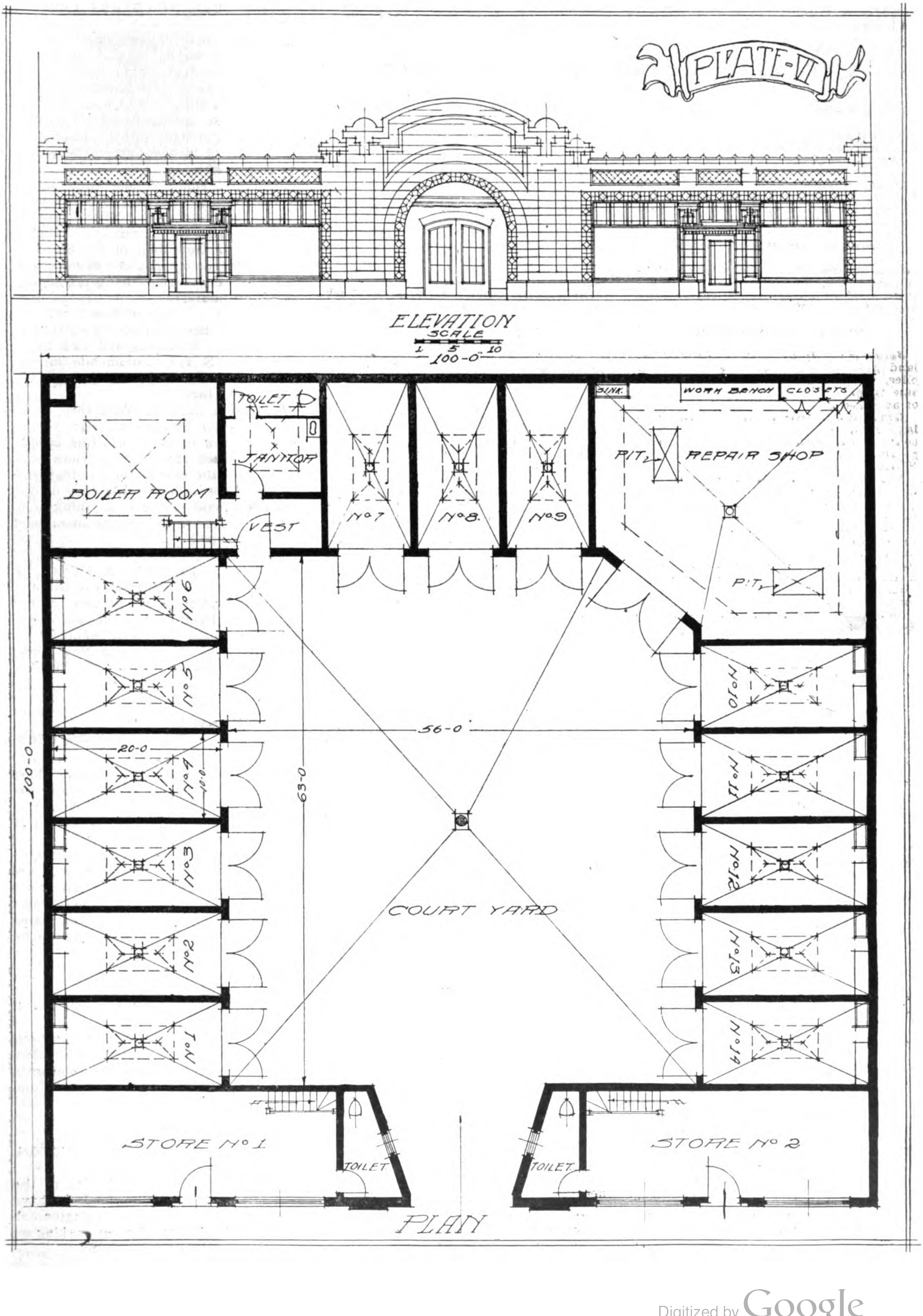
The Red Cross War Council has announced a gift of $500,000 from the Ford Motor Co. of Detroit. The donation is in the form of credit on the Ford factory for half a million dollars worth of any automobiles, ambulances and parts.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STORE No 1
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STORE No 2
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PLAN

# TRADE INFORMATION EXCHANGE

## A National Clearing House for the Trade's Needs

### GASOLINE PLEASURE CARS.

**South Bend, Ind.;** The Smith Rausch Motor Sales Co., 100 Lincoln way, is in the market for gasoline pleasure cars; selling price, $750.

**Grand Rapids, Mich.;** The Western Michigan Paige Co., 214 Ionia avenue, is anxious to secure the agency for pleasure cars; selling price $1200.

### GASOLINE COMMERCIAL CARS.

**Grand Rapids, Mich.;** The Western Michigan Paige Co., 214 Ionia avenue, is interested in gasoline commercial cars; selling price $700 to $1200.

### SPECIAL OPPORTUNITY.

**Jersey City, N. J.;** E. S. Ward, 6 Vreeland place, is desirous of securing supplies, which may be purchased at wholesale (namely, factory prices), on all kinds of accessories.

**Grand Rapds, Mich.;** The Western Michigan Paige Co., 214 Ionia avenue, would consider the agency for a medium priced pleasure car or truck in the territory of Western Michigan.

**New York, N. Y.;** Charles H. Watts Co., Inc., 25 Whitchell street, is anxious to get in touch with manufacturers interested in the making of Ford parts and accessores.

**Salt Lake City, Utah;** Standard Chemical Products Co. (Edgar S. Darling, manager,), are in the market as distributors for Utah, Idaho and Wyoming for articles in the auto accessory line and would consider a line of trucks for the above territory.

**Wheeling, W. Va.;** Hawthorne Auto and Equipment Co. is anxious to secure two 500-gallon gasoline tanks for underground installation in connecton with the pumping equipment of the Guarantee Liquid Measure Co.

### ACCESSORIES, SUPPLIES AND EQUIPMENT.

**Elliot, Ill.;** W. A. Kreitzer is interested in elevators.

**Warsaw, Ind.;** L. M. Neher is in the market for air compressors, air pumps, arbor presses, batteries, bulbs, bumpers, carburetors, fire extingushers, gasoline, lathes, tire accessories, tires.

**Grand Rapids, Mich.;** The Western Michigan Paige Co., 214 Ionia avenue, is desirous of securing bearings, bodies, bumpers, chains, heaters, horns, lamps, recording time clocks, searchlights, wash stands and special bodies for commercial cars.

**Johnstown, N. Y.;** Louis K. Maylender, Jr., 16 North Perry street, wants information regarding air pumps, anti-rattlers, batteries, belts, bodies, bulbs, bumpers, chains, glass, horns, mechanical starters, odometers, tools, waste and special bodies for commercial cars.

**Abbottsford, Wis.;** J. A. Riling is in the market for air compressors, air pumps, asbestos welding equipment, batteries, boilers, bulbs, bumpers, cases, cements, chains, curtains, dimmers, fasteners, fire extinguishers, gaskets, gauges, glass, goggles, greases, headlights, jacks, lamps, locks, oils, patches, pins, plugs, pulleys, punches, scrapers, searchlights, recording time clocks, seats, separators, shock absorbers, soaps, speedometers, springs, switchboards, transmissions, varnishes, wash stands, whistles, windshields, wire, wrenches and special bodies for pleasure and commercial cars.

### LELANDS ORGANIZE THE LINCOLN MOTOR COMPANY.

Henry M. Leland, formerly president of the Cadillac Motor Co., and his son, Wilfred C. Leland, have organized the Lincoln Motor Co., with a capital of $1,500,000. The old plant of the Rands Manufacturing Co. is being used for manufacturing operations, over 100 employees having been set to work. The company will manufacture the new U. S. A. engines and when work gets under way over 2000 employees will be engaged and a daily production of 20 airplane engines will be attained.

Associated with the Lelands in the company are W. H. Murphy, Joseph Boyer, John Trix, George H. Laying, W. R. Johnson, William T. Nash, Frank Johnson, A. U. Widman, Ernest E. Sweet, Le Roi J. Wildams, E. T. Randall, J. Wilbur Brown and M. W. H. Wilson.

### STOCKHOLDERS OF SPRINGFIELD BODY MEET.

The stockholders of the Springfield Body Corporation held a meeting during the last week in August and after receiving a report on the financial condition of the company appointed a committee to represent their interests during the receivership proceedings which were recently started. Morris L. Ernst was appointed as chairman of the committee.

A meeting of the defunct corporation's creditors was also held the same week and the fact was brought out that the assets had shrunk approximately $200,000 as compared with initial estimates and the liabilities which were at first scheduled at $638,000 total nearly $800,000. B. F. Everett, who has been acting as receiver for the concern, will be nominated by the creditors as trustee. A creditors' committee was formed of the following: Chairman, George W. Woods; George I. McClure, J. A. Milott, F. C. Sibley, George C. Dyer, Walter N. Kelly and J. B. Mansfield.

### HARRY KENNEDY KILLED IN OHIO FAIR RACE.

Capt. Harvey Kennedy, the well known racing pilot of San Francisco, was instantly killed at the county fair grounds, Lima, O., on Aug. 31, when his car turned turtle during a race.

He was driving the car in which Joe Dawson won the Elgin road race. He had placed a sheet iron cowl on the machine recently and when the car turned turtle the cowl struck on his neck, nearly decapitating him.

Kennedy won the Santa Monica race in 1915 and recently set a new record on a California track for 25 miles.

### NEW YORK NON-GLARE LAW.

The New York automobile lighting law says the front lamps

Shall give sufficient light to reveal any person, vehicle or substantial object on the road straight ahead at least 250 feet.

Shall be so arranged that no portion of the beam of light 75 feet ahead shall rise above 42 inches, left of the centre of axis of light.

Shall give sufficient side illumination to reveal any person, etc., 10 feet to both sides at a point 10 feet ahead of lamps.

There having been a number of claims made as to the ruling of the State of New York as to non-glare devices, the following letter from the secretary of state is of interest:

State of New York.
Secretary of State's Office,
Broadway and 74th St.,
N. Y. C. Automobile Bureau.
Aug. 7, 1917.

J. H. Faw, Inc.
41 Warren St., New York City.

Gentlemen:—In reply to yours of the 2nd inst., beg to state that this bureau has not issued any list of devices complying with the new law of headlights.

I am enclosing herewith a copy of this law and would say that anything coming within the requirements mentioned therein is legal.

Respectfully yours,
FRANCIS M. HUGO,
Secretary of State.

J. H. Faw, Inc., manufacturers of the Lennon Light Protector, do not claim that their device has been "adopted" or "approved" by the State of New York, but that it does fully meet the requirements of the laws of every state.

### WISCONSIN WILL RAISE REGISTRATION FEES.

Under the new Wisconsin law, which becomes effective Jan. 1, 1918, motor car owners in that state will be obliged to pay $10 for an annual license instead of $5, which fee has been the legal rate for the past eight years. Dealers will have to pay $25 a year for a license and motorcyclists $4 instead of $10 and $2 respectively, the former fees. Each dealer will receive eight pairs of license plates under the new law, whereas before he only received four pair.

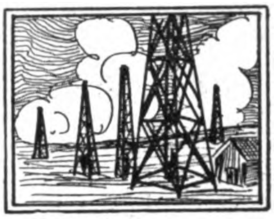
### PARTIN-PALMER CHANGES PRODUCT TO COMMONWEALTH.

The name of Partin-Palmer has been discontinued by the Commonwealth Motors Co., Chicago, Ill., and the company's products hereafter will be styled Commonwealth.

### CHRISTIAN GIRL AND J. G. UTZ IN WASHINGTON.

Christian Girl and J. G. Utz of the Standard Parts Co., Cleveland, O., have become members of the Washington colony of S. A. E. men who are working on the government's war program.

# Securities and General Materials Markets



## Automobile Securities Quotations

| | Aug. 9 | | Sept. 13 | |
|---|---|---|---|---|
| | Bid | Asked | Bid | Asked |
| Ajax Rubber Co | 66 | 67 | 60 | 62½ |
| J. I. Case, T. M. Co., pfd | 78 | 84 | 75 | 83 |
| Chalmers Motor Co., com | 5 | 10 | 7 | 10 |
| Chalmers Motor Co., pfd | .. | .. | .. | .. |
| Chandler Motor Car Co | 83 | 83¾ | 79½ | 80 |
| Chevrolet Motor Co | 92 | 95 | 69 | 71 |
| Fisher Body Corp., com | 40 | 40¾ | 31 | 28 |
| Fisher Body Corp., pfd | 88½ | 90 | 86½ | 90 |
| Fisk Rubber Co., com | 74 | 76 | 65 | 70 |
| Fisk Rubber Co., 1st pfd | 104 | 106 | 104 | 106 |
| Fisk Rubber Co., 2nd pfd | 92 | 95 | 92 | 95 |
| Firestone Tire and Rubber Co., com | 114 | 119 | 116 | 120 |
| Firestone Tire and Rubber Co., pfd | 102 | 105 | 102½ | 104½ |
| General Motors Co., com | 115 | 115½ | 96¼ | 96¾ |
| General Motors Co., pfd | 87⅞ | 88¼ | 82 | 87 |
| B. F. Goodrich Co., com | 49 | 50 | 46 | 47 |
| B. F. Goodrich Co., pfd | 105 | 106 | 101 | 106 |
| Goodyear Tire and Rubber Co., com | 195 | 198 | 186 | 190 |
| Goodyear Tire and Rubber Co., pfd | 105 | 107 | 101 | 105 |
| Grant Motor Car Corp | 3 | 6 | 3 | 5 |
| Hendee Mfg. Co | 31 | 32 | 20 | 30 |
| Hupp Motor Car Corp., com | 2½ | 3½ | 2½ | 3½ |
| Hupp Motor Car Corp., pfd | 72 | 80 | 80 | 85 |
| International Motor Co., com | 5 | 10 | 13 | 15 |
| International Motor Co., 1st pfd | 30 | 50 | 58 | 61 |
| International Motor Co., 2nd pfd | 10 | 20 | .. | .. |
| Kelly-Springfield Tire Co., pfd | 45¼ | 49 | 44 | 44½ |
| Kelly-Springfield Tire Co., com | 87 | 95 | 87 | 95 |
| Lee Rubber and Tire Corp | 21¼ | 21¾ | 18½ | 10½ |
| Maxwell Motor Co. Inc., com | 34⅝ | 35¼ | 31¼ | 32 |
| Maxwell Motor Co., Inc., 1st pfd | 64 | 65 | 66 | 67 |
| Maxwell Motor Co., Inc., 2nd pfd | 24¼ | 25 | 18½ | 20 |
| Miller Rubber Co., com | 165 | 175 | 175 | 180 |
| Miller Rubber Co., pfd | 102 | 104 | 102 | 104 |
| Packard Motor Car Co., com | 126 | 132 | 145 | 152 |
| Packard Motor Car Co., pfd | 94 | 99 | 96 | 99 |
| Paige-Detroit Car Co | 24 | 27 | 24 | 26 |
| Peerless Truck and Motor Corp | 13 | 15 | 13 | 15 |
| Portage Rubber Co., com | 145 | 150 | 140 | 150 |
| Portage Rubber Co., pfd | .. | .. | .. | .. |
| Regal Motor Car Co., pfd | .. | .. | 15 | 20 |
| Reo Motor Car Co | 25 | 27 | 26 | 27 |
| Saxon Motor Car Corp | 18½ | 19⅛ | 13 | 14½ |
| Springfield Body Corp., com | 5 | 15 | 1 | 6 |
| Springfield Body Corp., pfd | 20 | 40 | 8 | 18 |
| Standard Motor Construction Co | 11 | 12 | 8¾ | 9 |
| Stewart-Warner Speed. Corp | 61 | 62 | 57½ | 58½ |
| Studebaker Corp., com | 53⅛ | 53½ | 43¾ | 44 |
| Studebaker Corp., pfd | .. | 96 | .. | 96 |
| Swinehart Tire and Rubber Co | .. | 60 | .. | 60 |
| United Motors Corp | 23⅝ | 23⅞ | 19¼ | 19¼ |
| U. S. Rubber Co., com | 61⅝ | 62 | 60¾ | 61 |
| U. S. Rubber Co., pfd | 106½ | 109 | 105 | 106 |
| White Motor Co | 46½ | 47⅜ | 45 | 46 |
| Willys-Overland Co., com | 32¾ | 32⅞ | 27½ | 27¾ |
| Willys-Overland Co., pfd | 95⅝ | 99 | 88 | 92 |

## General Market Prices

| | Aug. 15 | Sept. 14 |
|---|---|---|
| Iron, foundry, S., ton | 49.90 | 49.90 |
| Iron, foundry, N. ton | 47.00 | 47.00 |
| Steel, Bessemer, ton | 90.00 | 90.00 |
| Iron, Bessemer, ton | 52.70 | 52.70 |
| Copper, electric, 100 lbs | 27.00 | 26.50 |
| Copper, lake, 100 lbs | 29.50 | 27.00 |
| Lead, 100 lbs | 10⅞ | 9½ |
| Tin, 100 lbs | 62¾ | 62½ |
| Petroleum, Kan., cr., bbl | 1.90 | 2.00 |
| Petroleum, Pa., cr., bbl | 3.25 | 3.50 |
| Linseed oil, raw | 1.24 | 1.20 |
| Lead oil, prime | 1.88 | 1.88 |
| Fish oil, Menhaden, br | 84 | 84 |
| Sulphuric acid, 60 | 1.50 | 1.50 |
| Cottonseed oil, bbl | 15.75 | 16.40 |
| Silk, raw, Italy | 7.40 | .... |
| Silk, raw, Japan | 7.47½ | 6.60 |
| Rubber, fine, up-river, Para | 69 | 69½ |
| Tire, scrap | 6½ | 6½ |
| Steel, open hearth, ton | 90.00 | 90.00 |

### DOMESTIC CRUDE OIL PRICES.

The prices of crude petroleum at the wells during the middle of the month of September were:

| | | | |
|---|---|---|---|
| Pennsylvania dark | $3.55 | Corsicana light | $1.90 |
| Mercer black | 2.22 | Corsicana heavy | 1.05 |
| Cabell | 2.57 | Electra | 2.00 |
| New Castle | 2.10 | Henrietta | 2.00 |
| Corning | 2.60 | Caddo, La., 38° | 2.00 |
| Wooster | 2.88 | Caddo, La., heavy | 1.00 |
| North Lima | 1.28 | Healdton | 2.00 |
| South Lima | 1.28 | Moran | 2.00 |
| Indiana | 1.98 | Strawn | 2.00 |
| Princeton | 2.12 | De Soto | 1.90 |
| Somerset 32° | 2.40 | Thrall | 2.00 |
| Ragland | 1.10 | Crichton | 1.50 |
| Illinois above 30° | 2.12 | Canada | 2.48 |
| Kan. & Okla | 1.00 | Humble | 1.00 |
| Plymouth | 1.03 | Cal., 37 grav | 1.32 |

**Naphtha.**

| | 10-gal. drums | |
|---|---|---|
| | Under 100 cases | 100 cases and over |
| Benzine, 59-62° | 38 | 37 |
| Stove | 38 | 37¾ |
| Auto, 68-72° | 43¾ | 43¼ |
| Naphtha, 73-76 | 47¾ | 47¼ |

| | In cans and cases | | |
|---|---|---|---|
| | Under 100 | 100-199 | 200-299 |
| Benzine, 59-62° | 32½ | 32¼ | 32 |
| 73 a 76° | 42¼ | 42 | 31¼ |
| Stove | 32¾ | 32½ | 32¼ |
| Auto, 68-72° | 38¼ | 38 | 37¾ |

### NEW YORK CITY PRICES.

New York City prices for petroleum and its products were:

**Petroleum.**

| | | | |
|---|---|---|---|
| Crude, barrels, a gallon | 15a18 | Fuel, 31° | 10½ |
| Refined barrels | 18 | Fuel, 34° | 11 |
| Tank wagons delivery | 9 | | |

**Naphtha.**

| | | | |
|---|---|---|---|
| Garages | 24 | V. M. & P. deod., in steel | 23 |
| Consumers | 26 | V. M. & P. deod., in wood | 26 |

**Gasoline.**

| | | | |
|---|---|---|---|
| Gas machine, steel | 41 | 68-72° steel | 32 |
| 72-76° | 28 | 68-72° wood | 28 |
| 72-76° wood | 33 | | |

## Foreign Trade Opportunities

(Address Bureau of Foreign and Domestic Commerce, Washington, D. C., Giving Number, Which Will Forward Correspondence, Unless Otherwise Stated.)

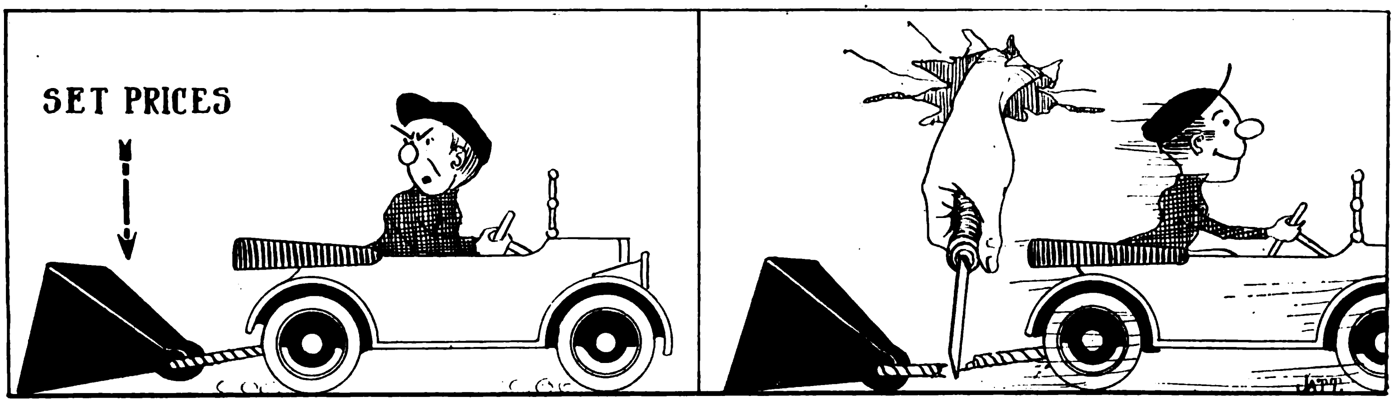
25,160. A business man in Spain wishes to buy and secure the exclusive representation in that country for the sale of automobiles and accessories. Quotations should be made f. o. b. New York. Payment will be made by cash upon receipt of goods. Correspondence may be in English, but Spanish or French is preferred. Reference.

25,181. A man from the Netherlands who has opened a branch office in the United States and who will be there personally for a period of about three months, is in the market for technical articles, such as automobiles, motorcycles, boat motors and all parts and accessories thereof, electro technical articles, labor saving devices, etc. References.

25,209. A man in Borneo desires to purchase complete machinery and equipment for making denatured alcohol for use in farm engines, automobiles, launch motors, and for heating and lighting, the alcohol to be made from tapioca roots, if not too costly. Quotations for complete outfit should be submitted. He also wishes to buy small agricultural motor tractors.

25,219. A company in British East Africa desires to purchase all kinds of motor car accessories, except tires. It also wishes to entertain an agency proposition for the sale of these goods. Payment will be made by sight draft with bill of lading attached. Quotations may be made f. o. b. New York with statement as to cost of through freight. Goods should be packed in extra strong crates and boxes and protected with waterproof wrapping. Correspondence may be in English. Reference.

25,318. A firm in Australia wishes to represent American manufacturers and exporters of all kinds of motor accessories and general hardware. References.



Cutting the Incubus from the Used Car Lets It Speed Away on Real Value and Affords Relief to the Industry, Which Has Been Dragging a Heavy Load Unnecessarily.

# *Service Values of Used Cars vs. Set Prices*

## Dealers Find Sound Business Introduced in Exchanges and Second Sale Transactions Prove the Latter an Impossible Proposition

SERVICE value as the basis for determining the worth of a second sale automobile, as asserted and maintained by the Automobile Journal and the Accessory and Garage Journal for several months past, shows wider acceptance daily. Take it in general, the manufacturer, dealer and owner, separately and collectively, have an interest in what is built in their cars which no graduated chart of depreciation can successfully oppose. Large movements of used cars, it is found, are accomplished under the application of only the soundest rules of business. The law of supply and demand, together with the merit in the article, are the basic factors underlying the ever improving market for used cars and new cars in the experience of a season which has been remarkable for the many great problems it has presented to the motor vehicle trade at the same time that the nation set itself to the huge task of a foreign war.

Service is easily the master note of the day in all lines and it has an intensive application to used cars.

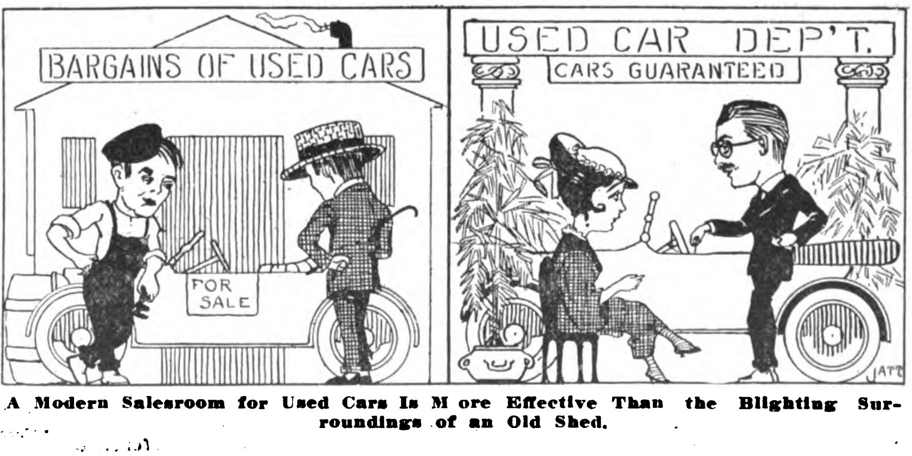
The close relation of service to value becomes equally apparent when the object is so closely linked with the individual as is the case in the automobile. As used cars become better understood in the terms of the services they render to their owners, or will render to their intending owners, the fears that have often been entertained regarding them dissolve like the mist before the morning sun. Recognition in the trade, as well as by the public, of the service values in used cars spells defeat of false, low valuations, fixed by arbitrary charts of depreciation.

Set prices on different models cannot continue a drag on the automobile trade when the Automobile Journal's campaign of education shows in what the real worth of a car consists—the service that is built into it for the motorist. The merit remaining in a used car is readily shown to be dependent on one element and one element only. This element is "condition." Condition, however, subdivides into a number of phases, according to the varying viewpoints of judgment. The mechanical condition is the all-important phase, as that determines the great questions of serviceability. Outward condition and appearance bear on the subject of style and taste, while the inward condition determines the point of performance, the ultimate reason for which every owner owns a car.

The one big fact that cannot be evaded is that the automobile owner knows the service worth of his car. He is acquainted with its mileage record and condition as no one else can be. Considerable stress is sometimes laid upon the owner's high estimate of his car as being due to sentimental associations. In this hardheaded business age, however, the service a car gives is taken of far more account than sentimental feelings. It establishes a form of worthy pride resting on a solid foundation; a factor demanding recognition and weight in all transactions affecting the disposal of a man's useful property. The set price plan advocated by an individual, association or publication runs counter to this and many others of the owners' best interests. Nor are the manufacturers and dealers benefited until they discard it. It is more than interesting in this connection, therefore, to note that there is an upward trend in the used car market and all indications point to the development of conditions that will parallel those already surrounding the automobile trade in England, where, owing to war conditions, there is such a light production of passenger cars that second hand machines up to five years old bring from 75 to 95 per cent. of their original cost and in some cases more than they were originally sold for.

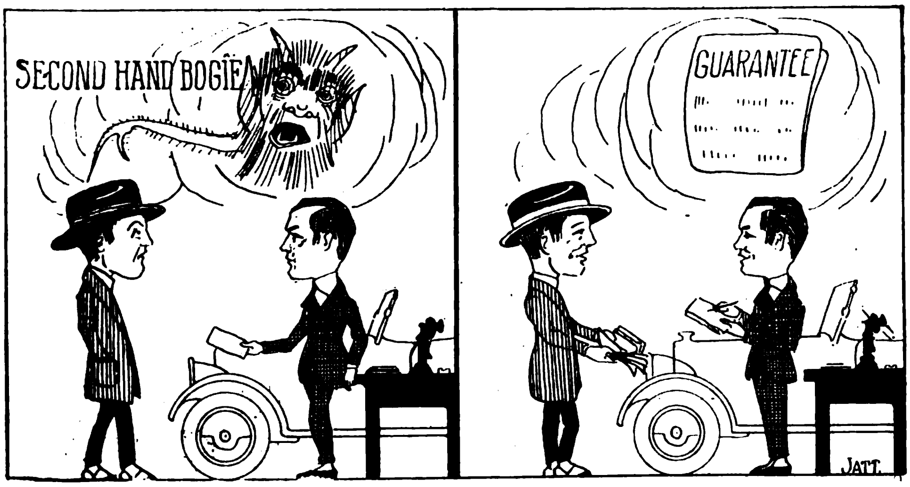
Dealers, who on the impulse of the moment may have indorsed the fixed price idea, soon realize what an impossible proposition they are fostering. It does not take much time or any great reasoning to see the futility of appraising the value of a used car by a chart or set form, arbitrarily establishing its market value.

It begins to dawn on the trade that the problem of the used car is in no way different to that which has been solved in the typewiter, cash register, adding machine and in similar lines of trade. It has been looked upon as a side issue and given less attention than it really demands, with the result that many dealers did not come



A Modern Salesroom for Used Cars Is More Effective Than the Blighting Surroundings of an Old Shed.

to realize the magnitude of the problem until they found themselves with a white elephant on their hands in the shape of a large number of used cars. In many instances the profits of several years' business were tied up in used cars before the dealer awoke to the necessity of applying a remedy. There was absolutely no way of avoiding the problem, as nearly 80 per cent. of all new business is contingent on a trade-in of a second hand car, so progressive dealers studied out ways and means of meeting the situation.

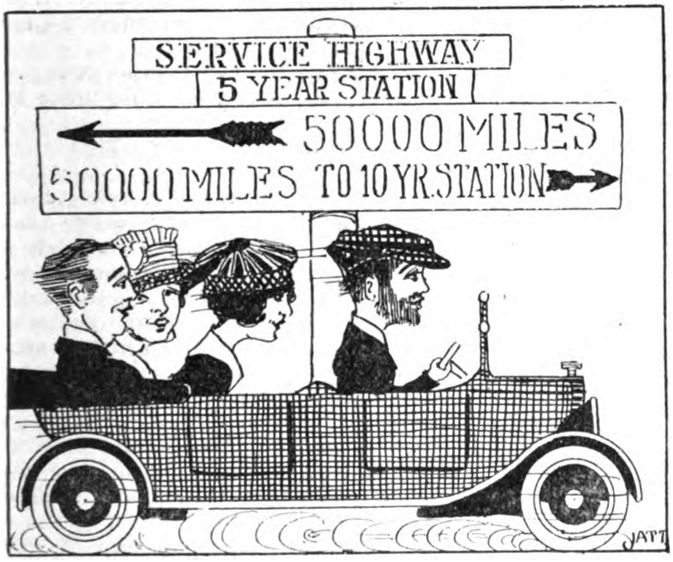


The Very Name of Used Car Brings Fearful Visions to Many Unless Met with a Straightforward Proposition.

At one time used cars were sold much after the manner of junk, "as is" being a term generally used as a basis of sale, meaning that the seller guaranteed nothing and the buyer took the car unconditionally. This method of distributing the used cars naturally was a failure, as it incited suspicion at the start and made prospective motorists particularly wary.

Car dealers and used car dealers soon perceived that there is something radically wrong in that method of merchandising, as no other line of goods was ever successfully marketed on such a plan.

The people who bought cars on the "as is" plan, when anything went wrong, felt that they had been imposed upon and the seller could never figure on that customer as a prospect again. The heavy depreciation that was charged against most cars was responsible for this condition and the condition would still obtain in the trade if the best friends of the motor car had not discovered that a remedy lay in maintaining a higher value for the used car, enabling repairers to fix the cars, put them in good running order and stand back of them with some sort of a guarantee. This business policy not only makes it possible for the dealer to dispose of his used cars more readily, but in turn has created a far more favorable attitude on the public's part concerning the values of used cars. A glance at the advertisements in the press of any of the large cities of the eastern and New England states, reveals a new era in the used car business. Practically every dealer offers some kind of a guarantee and they make specific statements as to the condition and appearance of the cars offered, while others go further and give a certain amount of free service with every car sold, to be used whenever needed. The extent of this free service, however, is regulated in accordance with the price paid for the car.



Substantial Cars Make the Half-Way Point in Service Life Showing Fitness for 100,000 Miles.

In fact, the business today is being operated on a similar basis to that employed in the distribution of new cars and some of the dealers go to the extreme of practically rebuilding a car before offering it for sale. They not only restore its mechanical condition in every respect, but also renew the finish if it is necessary. This plan not only gives the users of that class of car considerable pride in its ownership, but it serves to maintain values so that it is always easier to market a new car of that make and the used cars can be handled with greater leeway owing to larger margin of profit afforded.

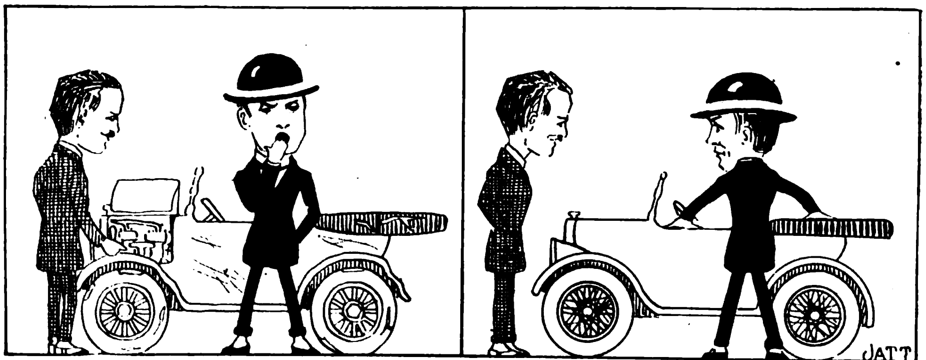
### Cultivating the Trade.

Used car dealers even go so far as to cultivate their trade carefully, with the result that they can sell the same customer again and again, and it is a known fact, from figures kept by one dealer, that many motorists buy several used cars before they buy a new car.

It is far easier also to convince a person that the service claimed is actually contained in a car if it makes a good appearance. Everyone is susceptible to impressions and is largely influenced by them in making a purchase of any kind of article, which fact makes it more difficult to dispose of merchandise if its appearance is poor. Some merchandise can show marked wear externally and yet its service value can easily be recognized, but in the case of an automobile, scratched paint, dented bodies and guards, ragged tires will prejudice a machine in a man's eye to a point where, even if it is mechanically perfect, the dealer will have great difficulty in establishing the fact to the customer's satisfaction.

An expenditure of $25 to $50 on the car would not only make it presentable, but would easily enhance its value in the customer's estimation to a point where the dealer could not only make a quicker sale, but a sale at a price that will return the money outlaid for renovation. The worth of any article does not rest solely in its intrinsic value, but is based also on its general attractiveness, which fact shows that any treatment a car may receive enhancing its appearance is actually increasing its market value.

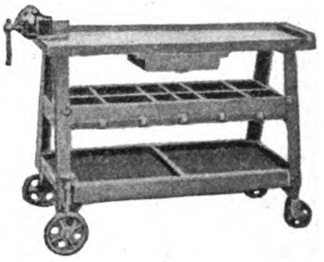
The conditions in this country governing used car values seemed to have evolved along similar lines as in England, where prices for a while showed a marked depreciation, until the business was placed on a sounder basis.



A Car Mechanically Sound Needs Also to Be Made Pleasing to the Eye in Order to Win a Customer's Favor.

# GARAGE EQUIPMENT

**Brunner Air Compressor Outfit.**



**United Engine Portable Bench.**

## PORTABLE FILLING STATION.

To meet the great demand for a portable filling apparatus the anti-syphoning filling station shown in the illustration has been designed. Upon two large and two small steel wheels is mounted a welded steel tank constructed of 3/16 inch boiler sheet steel, which forms the body of the machine. Upon the tank is mounted a measuring pump, which is equipped with a filter, meter and anti-syphoning, hose draining valve and contents gauge. The tank is fitted with a locking filler pipe cap.

A special feature is the anti-syphoning, hose draining valve, which acts as a check against syphoning and as a guarantee of constant measurement for both hose and can discharge.

The pump is of a special type and is so designed as to deliver one quart of liquid at every crank revolution. There is no rack and pinion in this design and the makers claim absolute accuracy for it under all conditions.

All of the working parts are tightly enclosed in a dust proof housing and cannot be changed or tampered with.

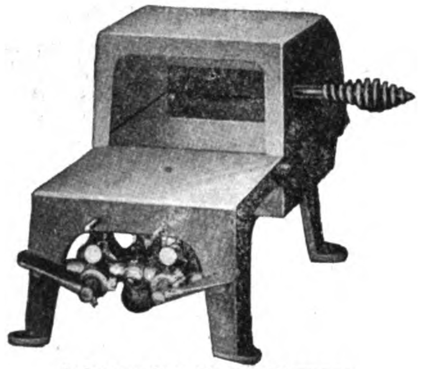
**Manufactured by Shotwell Pump and Tank Co., 27 North Alabama St., Indianapolis, Ind.**

## THE VAPORSPRAY.

Every painter or enameler knows that for good results there is nothing better than the spray method of applying paint or enamel. With this method the paint can be applied evenly and smoothly, and when properly done has a glass finish that cannot be obtained with a brush. The Vaporspray is a scientifically designed apparatus for applying paint. This device is in effect a large air brush operating from pressure from 10 to 100 pounds. It is simple, for it has absolutely no adjustments to be made. The size of the spray is regulated by pressure exerted on the thumb button. The further the button is pushed in the faster the fluid will flow. Another appealing feature is the fact that the reservoir is an ordinary mason jar, which can be obtained at any hardware store, thus making it possible to use any number of jars which may contain various liquids.

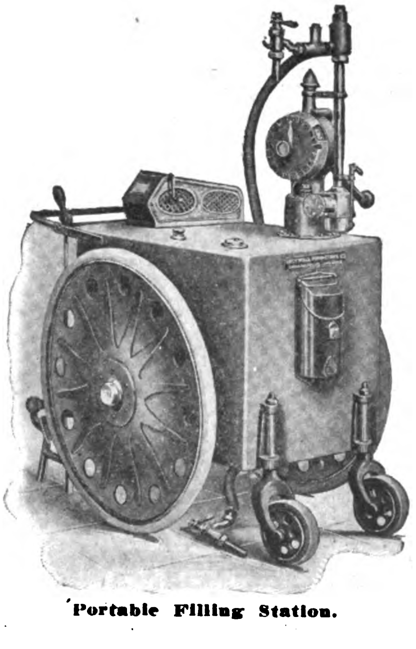
The equipment of the Vaporspray includes six feet of high pressure air hose with ⅛ inch pipe size connections. It is guaranteed and sold under a 30-day trial. Money refunded if not satisfactory.

**Made by Vapor-Valve Co., 2820 N. Spring Ave., St. Louis, Mo. Price $16.50.**



**Johnson Gas Bench Furnace.**

**Vaporspray Attachment.**



**Portable Filling Station.**

## JOHNSON GAS BENCH FURNACE.

No garage equipment is complete without some form of furnace for tempering or annealing tools or machine parts. The Johnson No. 101 gas bench furnace illustrated is designed for case hardening or heating small articles and makes a suitable equipment for the average repair shop. The firebox measures 3¾x4½x5½ and is fitted with two powerful gas burners, controlled independently. The rear shelf of the chamber affords a rest for soldering coppers, so that the high temperature flame does not burn off the tinning readily. The firebox is lined with extra quality heat resisting material and has a hood arranged to deflect the heat back into the chamber.

**Manufactured by Johnson Gas Appliance Co., Cedar Rapids, Ia. Price $12.**

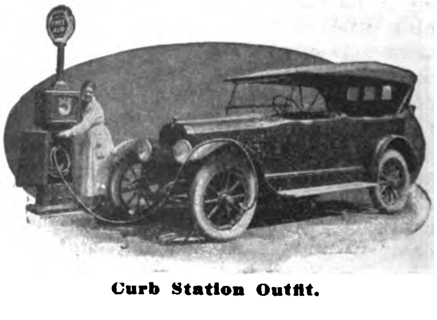
## CURB STATION OUTFIT.

A new and decidedly appealing device for automobilists has recently been placed on the market that should be of interest to every type of business by reason of its advertising value. It is called the Curb Lectroflater Station and is designed for the distribution of free air.

The station is massive and rugged in proportions, at the same time it has been designed with an eye to beauty, simplicity and effectiveness. Its lines are symmetrical and pleasing and the deep green enamel over its highly finished surface gives it a quiet dignity that is accentuated by the large beveled glass pressure dial and the substantial opalescent globe surmounting the taper column.

It is automatically operated day and night. The pressure dial in the upper front door is flooded with light by a lamp concealed inside the cabinet and the tire valve connector on the end of the hose is so arranged that the pressure in the tire before starting to inflate is registered on the dial.

The upper compartment is kept locked and contains a standard No. 2 Lectro-



**Curb Station Outfit.**

flater. The lower compartment, which is also provided with a lock and key, is normally left unlocked and contains a 25-foot length of heavy duty, triple braided hose and a rack for holding it when not in use.

Directly over the hose rack is an electric switch conveniently located for starting and stopping the Lectroflater when the large dial registers the desired pressure.

The whole apparatus is so arranged as to preclude the possibility of anyone tampering with the working parts and with the exception of the operating switch and hose connection, all parts are locked in the compartment. The device operates on either direct or alternating current and is said to be absolutely safe.

The Northern Electric Co., Ltd., Montreal, are the exclusive Canadian distributors.

**Manufactured by the Black & Decker Mfg. Co., 304 Water St., Baltimore, Md. Write for prices and catalogue of other apparatus.**

### FORD MOTOR REPAIR STAND.

This repair stand is made primarily for use while overhauling Ford engines, but if desired can be adapted to hold other makes of engines. The engine holding post is telescopic, readily adjusted to convenient working height. The two shelves are made of steel, measuring 30 by 20 inches, and are welded to steel posts. Malleable iron casters are fitted to the posts, making it easy to roll the table to any position in the shop. Aside from offering a place for putting parts of the engine, the stand is convenient, as the engine may be carried to different parts of the machine shop for machine repairs.

**Manufactured by the G. H. Dyer Co., Cambridge, Mass. Write for catalogue and prices.**

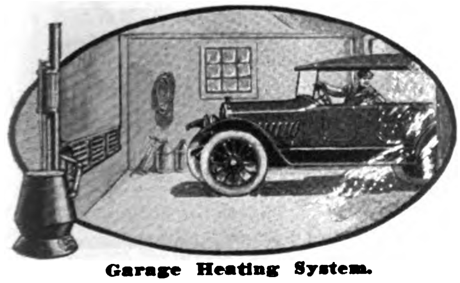
### GARAGE HEATING SYSTEM.

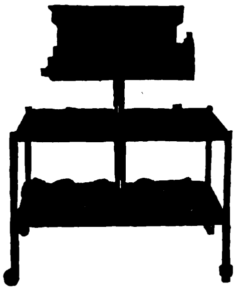
With the approach of winter the garage owner begins to consider methods of heating his garage. For this reason the accessory dealer should be able to satisfy him in matter of equipment.

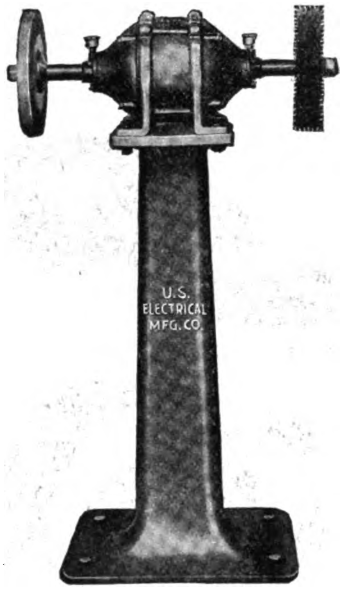
A product that is being brought to the dealer's attention is the Wasco garage heating system for private garages holding from one to 10 cars. This system is said to be both simple and economical, and consists of a coal burning heater fitted with lengths of heating coils to suit the size of the garage. The system is self-regulating and operates on the hot water principle, requiring but a minimum amount of attention.

The manufacturers make a very liberal offer to dealers and claim profits from $19.50 to $61.25 according to the size heater sold.

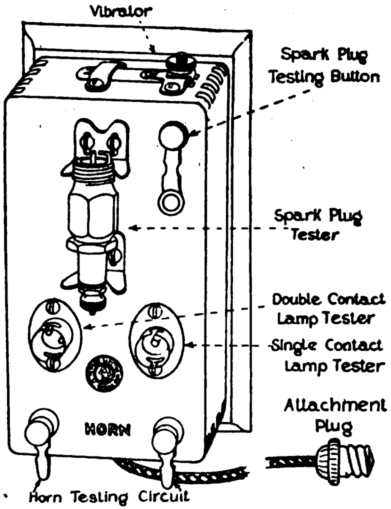
**Manufactured by the W. A. Schleit Mfg. Co., Inc., Syracuse, N. Y. Write for prices and literature.**

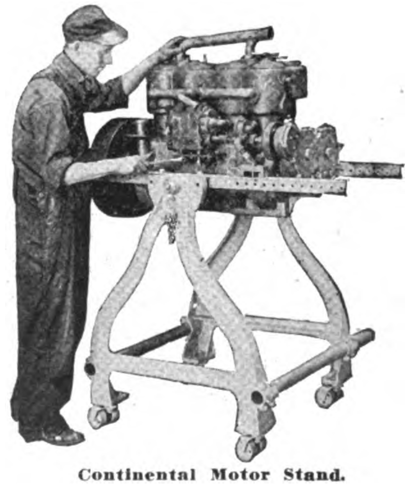

Garage Heating System.


Ford Motor Repair Stand.



Grinding and Buffing Tool.


Vibrator
Spark Plug Testing Button
Spark Plug Tester
Double Contact Lamp Tester
Single Contact Lamp Tester
Attachment Plug
HORN
Horn Testing Circuit
Combination Tester.


Continental Motor Stand.

### CONTINENTAL MOTOR STAND.

Efficiency is the watchword of the present day and every successful business must be run on the most efficient basis. The repairing of an automobile engine is an important job and only by doing the work well and quickly can the repair man hold his place in the big competitive race for success. The Continental motor stand is a device which makes for efficiency in that when the engine is mounted upon it it may be turned to the most convenient position for repair. This device is designed to be adjustable to practically any size automobile or truck engine. It is made of the best of materials and fitted with wheels so that it may be moved easily to any part of the repair shop. With the stand comes all of the necessary bolts and clamps to secure the engine into place.

**Manufactured by Continental Auto Parts Co., Knightstown, Ind. Write for descriptive booklet and prices.**

### COMBINATION TESTER.

A handy all around testing device for the repair man and accessory dealer, as well as the individual, is illustrated. It is designed for testing spark plugs, single or double contact lamp bulbs, horns, or for locating general electrical troubles. There are two types, the first for attachment to alternating current lighting circuits, and the second for battery attachment. In either case lamps of any candle power or voltage, spark plugs of any length, or electric horns of any voltage can be tested.

**Manufactured by Jefferson Electric Mfg. Co., 426-430 South Green St., Chicago, Ill. Price upon request.**

### GRINDING AND BUFFING TOOL.

A machine tool of practical value to the garage and tire repair man is the Johnson Electric Grinding and Buffing Tool. The machine is operated by a self-contained motor, with all its working parts enclosed in a dirt proof casing. The motor may be had in a number of windings at speeds of either 1800 or 3600 revolutions per minute. For garage work the arbors may be fitted with two grades of emery wheels; for tire vulcanizers, a buffer and grinding wheel. The manufacturers say that the machine is pleasing in appearance; smooth, easy running and silent in operation.

**Manufactured by U. S. Electrical Mfg. Co., 459 E. Third St., Los Angeles, Cal. Write for descriptive literature and prices.**

ACCESSORIES
AND
EQUIPMENT

## PUCKETT ANTI-RATTLER.

Every automobile owner realizes the annoyance caused by squeaks and rattles on his car. If he is a careful driver and gives his car constant attention, as soon as a rattle develops he tries to eliminate it. The Puckett Anti-Rattler is designed to be applied to the door jam of the car and is said effectually to prevent the door from rattling. It consists of a small roller mounted in a case upon a spring. The spring tension is adjustable through a screw on the face of the device. When the door is closed the roller presses against it, thereby preventing it from rubbing or pounding against the jam. The manufacturers claim that the device can be applied very quickly and easily.

**Manufactured by Western Auto Specialty Co., Iowa City, Iowa. Price, 50 cents each.**

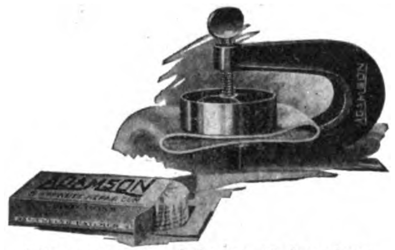
## STOCKBRIDGE SEMI-TRAILER.

In the July issue of Accessory and Garage Journal appeared a description of the Stockbridge Semi-Trailer, made by the Stockbridge Body Co., 130-6 Union St., Springfield, Mass. As the illustration used was of the same firm's Springfield body, the correct illustration, showing the method of attaching the semi-trailer, is reproduced herewith.

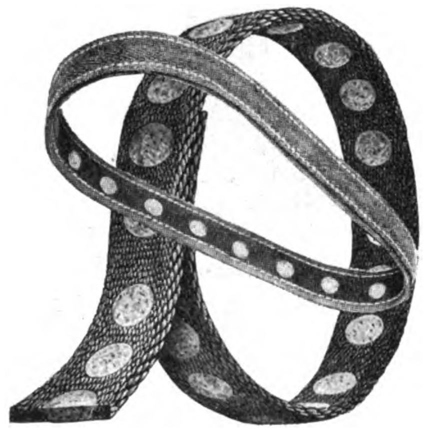
## CORK INSERTS.

The postage stamp has won fame because of its faithfulness in sticking to its appointed work. It has a worthy rival in cork, in its ability to hold its grip. Almost every other substance known to man becomes polished under constant friction and wear. Not so with cork. Cork avoids becoming slick and slippery as naturally as a duck sheds water. Some transmission fabrics become polished and slippery from service in the Ford car. The same is true of some fan belts. When this happens they do not function properly, the transmission bands do not grip, nor does the fan revolve. Cork inserts in both the bands and fan belts are said to be a perfect antidote for slipping, and since the buttons of cork do not polish or become hard, they do not lose their gripping qualities.

**Manufactured by Advance Automobile Accessories Corp., Dept. G 3-1, 56 East Randolph St., Chicago, Ill. Write for prices.**



Adamson Five-Minute Vulcanizer.



Cork Insert Fan Belt and Brake Lining.

## SCHRADER PRODUCTS.

A. Schrader's Sons, Inc., of 800 Atlantic avenue, Brooklyn, N. Y., announce a slight advance in the retail price of some of their products. The Schrader universal tire pressure gauge and the Twitchel air gauge has been advanced from $1 to $1.25. The price of Schrader universal valve insides, which hitherto has been 25 cents a box of 25, is now 30 cents.

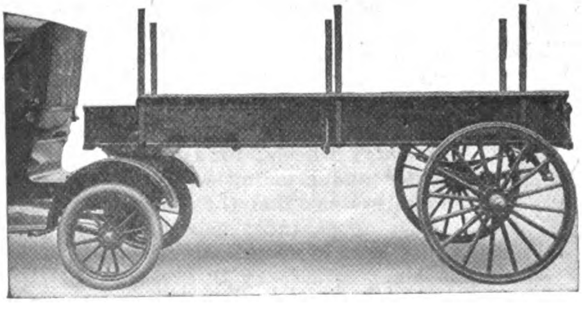
## FIVE MINUTE VULCANIZER.

Tire trouble is today the motorists' greatest trial. Mechanical troubles often can be foreseen and are dependent upon materials and car usage, while tire troubles are dependent upon conditions which do not follow given laws. The traveling motorist can only guard against these difficulties by preparing himself with suitable repair outfits. For repairing punctures or small holes in tires the Adamson five-minute vulcanizer, model E, should form a desirable device. This article is designed so that it may be clamped on to the tube, over which has been placed a specially prepared patch. Gasoline is placed in the vulcanizing cup and ignited. The time required for a completed patch is approximately five minutes, and it is said that the resulting repair is extremely efficient. With the vulcanizer is one dozen patches.

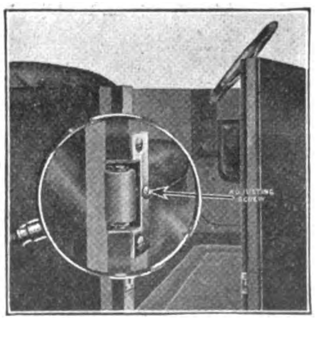
**Manufactured by Adamson Mfg. Co., East Palestine, O. Price $1. Extra patches, 25 cents a dozen.**

## FORD RELIEF SPRING.

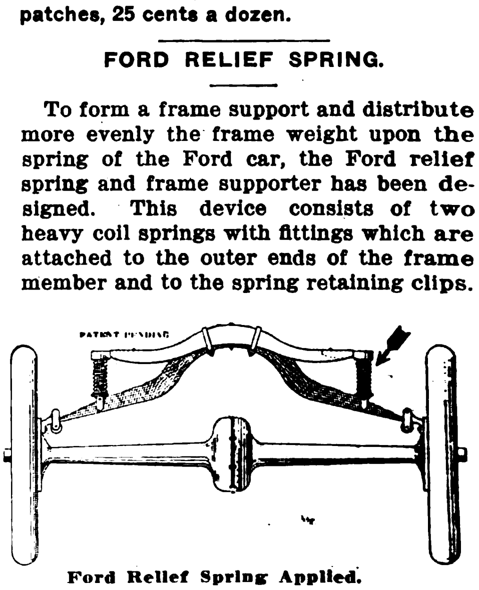
To form a frame support and distribute more evenly the frame weight upon the spring of the Ford car, the Ford relief spring and frame supporter has been designed. This device consists of two heavy coil springs with fittings which are attached to the outer ends of the frame member and to the spring retaining clips.



Stockbridge Semi-Trailer.



Puckett Anti-Rattler.



Ford Relief Spring Applied.

In this way the weight of the frame is supported by the spring at three points rather than simply at the centre. The manufacturers claim that with this type of spring support the life of the regular spring is lengthened, the resilience of the suspension increased and side sway absorbed.

**Manufactured by Ford Relief Spring and Frame Supporter Co., 76 East 42nd St., New York, N. Y. Price per set $8.**

## LENNON LIGHT PROTECTOR.

Headlight glare is the unnecessary evil that is being stopped in most states, since a great many of the automobile accidents are caused by the confusing light of improperly adjusted lights. The Lennon light protector is designed so that when it is placed on a bulb the light beams are taken out of the air and thrown down on the road. This device is made in one piece, from high grade spring brass, and fits an under or oversize bulb without danger of injury to the bulb. It is heavily plated and polished inside and out, and having no delicate springs or extra parts, it will not break or get out of order.

The manufacturers guarantee that when this set of protectors is properly placed on the headlight bulbs and focussed, they will meet all requirements of laws in the various states.

**Manufactured by J. H. Faw, Inc., 41 Warren St., New York City. Price $1 per pair.**

## PEERLESS ANTI-FREEZE LIQUID.

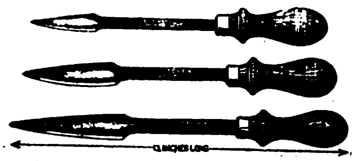
The makers of the Peerless products have added an anti-freeze radiator liquid to their line, which is called Peerless anti-freeze liquid. The liquid is sold in one-gallon cans, and in barrels, and is mixed with an equal amount of water to secure a freezing point of 15 degrees below zero. For lower temperatures more liquid is added and at a proportion of two parts anti-freeze liquid to one part water, the mixture will not freeze until 35 degrees below zero has been reached.

The manufacturers recommend that the liquid be purchased by dealers in barrels and sold in bulk, as oil is now sold. Accompanying each can is a chart which gives the approximate amount of liquid needed for some of the leading cars, as well as the proper proportions to use for low temperatures.

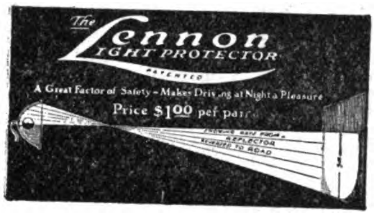
**Manufactured by the Columbus Varnish Co., Columbus, O. Write for prices and dealer's proposition.**

## CROWE FAN BELT.

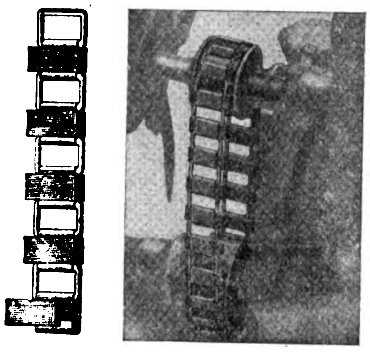
The Crowe mechanical fan belts are of unique construction, being made up of links and containers which hold flat leather inserts. It is claimed that with this combination of steel chain and leather friction surface the belt is both flexible and has great gripping power. The manufacturers say that but little tension is required for maximum efficiency and that direct contact is assured at all speeds.



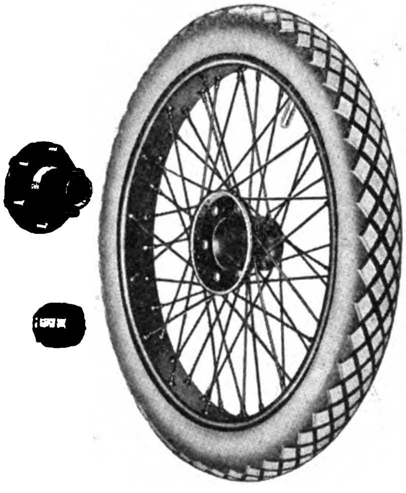
Stevens Bearing Scrapers.


The Lennon Light Protector
Patented
A Great Factor of Safety – Makes Driving at Night a Pleasure
Price $1.00 per pair
Showing rays from reflector thrown to road

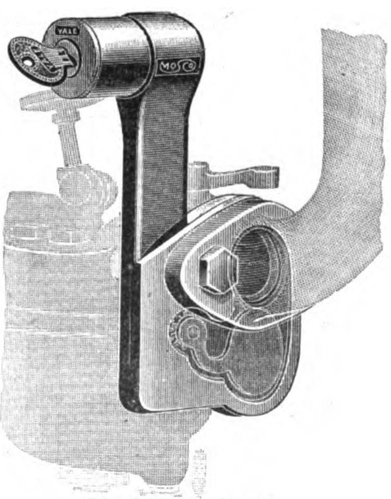
Action of Lennon Light Protector.



Crowe Fan Belt.



Dayton Wire Wheel.



Mosco Auto-Lock.

The links are adjustable and removable. The leather inserts being slipped from the belt at the side, allowing the attaching or removing of links as desired.

**Manufactured by Mechanical Belt Co., 1202 Frederick Ave., St. Joseph, Mo. Write for prices and literature.**

## FORD CAR STORAGE BATTERY.

A special storage battery for Ford cars is just being placed in the market. This type of battery may be used for lighting, starting or ignition, as usual, but because of its low construction it may be placed under the seat instead of in the steel box on the running board.

The makers claim a number of advantages for this installation. They say that with the battery beneath the seat a more even disposal of weight is possible, the unsightly running board box is removed and the unbalancing and great wear on the car is eliminated.

These batteries are built in the 70-90 or 110 ampere-hour capacity.

**Manufactured by Michigan Storage Battery Co., 67-69 Atwater St., E., Detroit, Mich. Write for prices.**

## MOSCO AUTO LOCK.

That the auto thief is not being foiled is evidenced by the alarming increase of automobile thefts, as shown by insurance and other statistics. To prevent the starting of the engine the Mosco auto lock has been made. This device is applied to the intake manifold between the carburetor and the manifold. It is fitted with a Yale lock and when the key is turned a gate is closed, preventing the entrance of gas to the engine. The whole device is enclosed in a hardened steel casing, where it is invisible and cannot be picked, nor shaken open. When applied to the manifold a hole is drilled in the hood so that the lock can be turned without lifting the cover.

**Manufactured by Motor Specialties Co., Waltham, Mass. Price $5.**

## STEVENS BEARING SCRAPERS.

To give satisfactory results a connecting rod or babbitt bearing must be scraped to fit the journal. Improperly contacting surfaces result in short service and sometimes damage to the engine. The Stevens bearing scrapers are made from drop forgings, carefully hardened and ground to edge. They are made in convenient shapes and come in sets of three as illustrated, the largest being 13 inches long.

**Manufactured by Stevens & Co., 375 Broadway, New York, N. Y. Write for prices.**

## DAYTON WIRE WHEELS.

The Dayton quick detachable wire wheel here illustrated is a new high grade product manufactured to meet the demand for a wire wheel for the Ford car. Due to the flexibility of the wheel more tire mileage is claimed when this wheel is used. In addition to this is the convenience of changing wheels rather than tires in case of a puncture. Great strength combined with stylish appearance are outstanding features claimed for this wheel.

Due to the abilities of its force to secure raw material, the manufacturers say that they will be able to make deliveries on all orders. For further information write to

**The Dayton Wire Wheel Co., Dayton, O.**

### CANTI-COIL SPRING SUSPENSION.

The perfect spring suspension will need no shock absorber, since to absorb shocks is the function of the springs. At the present time the average spring suspension is designed to absorb the road shocks to a certain extent, transmitting the balance of the upward thrust to the body, since the suspension is direct.

The manufacturers of Canti-Coil Spring Suspension have designed a suspension that supports the chassis, in an indirect manner, so that upward thrusts, or downward drops of the axles are absorbed or nullified by a system of longitudinal springs and reducing leverages, making what might be termed an indirect suspension. It is said that so great is the lever reduction and soft the spring action that the wheels may follow the contour of the road, while the body floats along dormant, so to speak.

With this system of suspension the manufacturers claim not only are the road shocks nullified, but side sway, torque and effects of rapid braking are greatly reduced.

**Manufactured by Reading Chassis and Motor Co., Reading, Pa. Write for prices and specifications.**

### HANDY PUSH BUTTON.

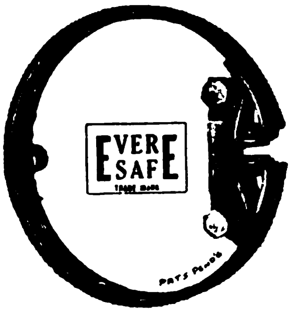
To be effectual an automobile warning signal must be so placed as to be effectual at a moment's notice. The Handy horn push button is designed with a holder so that it may be placed over the centre nut of the Ford steering wheel and wired to the regular Ford button equipment. When this is done the movement of one hand seven inches is sufficient to reach the button and sound the horn.

**Manufactured by the Francis-Rand Co., Cleveland, O. Price 75 cents.**

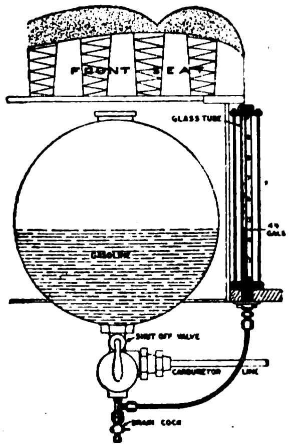
### NEW YORK FOOT SUPPORTER.

Every driver realizes that there is a great amount of strain of leg muscle in operating a foot accelerator over rough roads. Every jolt or jar is transmitted through the foot and has its effect upon the action of the engine. To prevent this strain and minimize the jar the New York foot supporter has been designed. As the illustration shows, it is attached to the footboard in such a manner as to support the weight of the foot upon an adjustable hinge. Two wood screws secure the device and once installed the position is always correct.

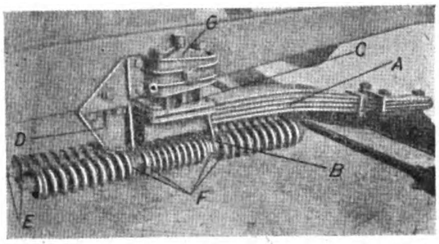
**Manufactured by New York Coil Co., 338 Pearl St., New York, N. Y.**



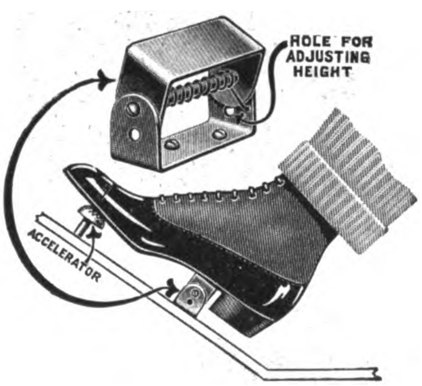
Ever Safe Emergency Brake.



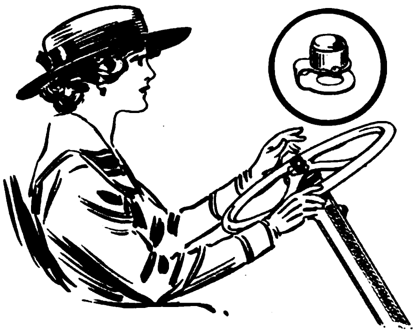
National Gasometer.



Canti-Coil Spring Suspension.



New York Foot Supporter.



Handy Push Button.

### EVER SAFE EMERGENCY BRAKES.

One cannot be too careful where the question of brakes is concerned, for upon them is dependent the lives of the passengers. The Ford emergency brake is of iron and to meet the demand for a lined brake band the Ever Safe emergency brake brand has been designed. This device is covered with a wire inserted, long fiber, asbestos brake lining material which can be renewed. The band is so arranged as to be adjustable, through shims, for wear, so that the lining can be used until nearly worn out. The brake shoe is made of band steel and covered by a broad guarantee, the makers stating that they will replace any shoe broken in normal use upon receipt of broken shoe at their factory.

**Manufactured by Never Break Products Co., Bangor, Pa. Price $2 per pair.**

### NATIONAL GASOMETER.

Have you often wondered just how much gasoline you had in your Ford car tank, yet didn't want to go to the bother of removing the cushion, tank cap and measuring the gasoline height? If your car is equipped with a National gasometer you will not be put to this bother. This measuring device is designed for attachment to the lower part of the standard Ford gasoline filter fitting and requires no alterations to apply. The gauge is mounted on the floor board, directly in front of the seat. The gasoline level can be told at a glance.

**Manufactured by the National Motor Supply Co., Cleveland, O. Price, $1.50.**

### PEERLESS TOOL KIT.

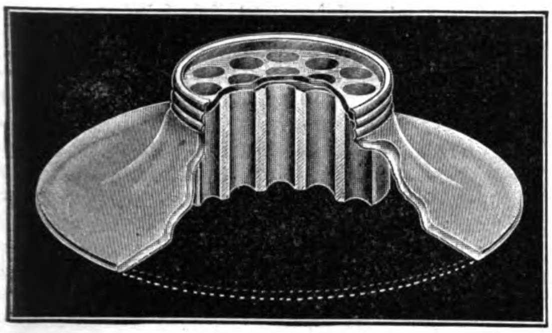
Motorists will be glad to learn of an addition to the regular Corcoran line of products of what is called the Peerless tool kit. Made entirely of sheet steel and measuring 22x9x7 inches, the kit presents an attractive appearance upon the running board. The finish is black enamel, two coats, baked on. The inside of the case is fitted with a wood tray, divided into compartments for screws, bolts or small tools.

**Manufactured by the Corcoran Mfg. Co., Cincinnati, O. Price $2.50.**

### AUTOPOWER.

"How to keep the pull in your engine" is the title of an interesting little circular which tells of the product called Autopower. This product is guaranteed to remove carbon when mixed with gasoline, thereby removing one of the greatest of the problems of the motorists. For every 1200 miles traveled only one quart of Autopower need be used. Satisfaction is warranted by the manufacturers who issue a sight draft payable to any purchaser who is not satisfied with the product.

**Manufactured by Autopower Division, the Crystal Oil and Paint Co., Cleveland, O. Price, $1.50 a package.**



Way-A-Head Light.

## FORDIMMER AND FORDALARM.

Two new Ford car accessories are shown in the illustration. The first is called the Fordimmer. By the use of this device the headlights may be dimmed at will by the driver, thus preventing headlight glare, which in many cities is prohibited. It is also a safety device in that the lights are kept from burning out at high engine speed. It is claimed that the voltage is regulated and that the ignition system is not affected by its use.

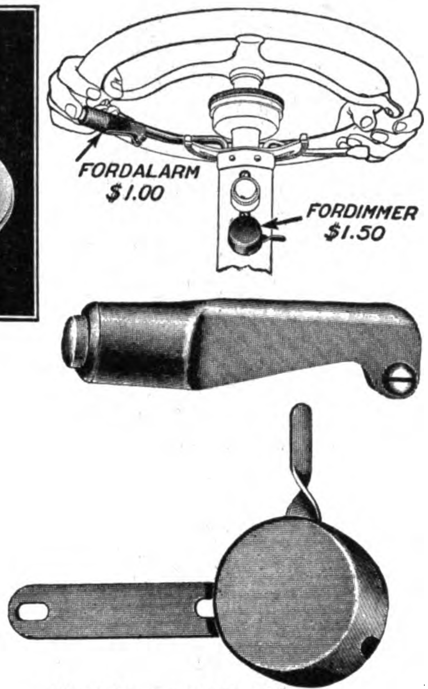
Many an accident has been caused by the dividing of the attention of the driver between the horn button and the wheel at a critical moment. At such a time both hands should be kept on the steering wheel. This situation is made possible by the use of the Fordalarm, a button mounted just beneath the steering wheel, on the end of the gasoline control lever. In emergencies the driver's hand is usually on this lever, and the second finger of the hand is always in position to press the alarm button if necessary and sound the horn.

**Manufactured by Detroit Novelty Mfg. Co., Marquette Bldg., Detroit, Mich. Price of Fordimmer, $1.50. Fordalarm, $1.**

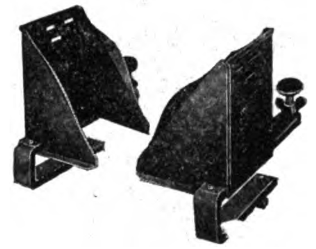
## SPRING LUBRICATOR.

An important factor in the comfortable riding qualities of the automobile is the lubrication of the springs. Because of the difficulty encountered in forcing grease or oil between the spring leaves, many operators neglect this important duty. To facilitate this operation, the Tomahawk graphite spring lubricator has been designed. It consists of a case in which graphite grease is inserted, and a double wedge spring separator, through which the grease may be forced in a thin stream. The back of the wedge is fitted with a striking head. When it is desired to use the device the car is jacked up and the tool inserted between the spring leaves, either with the pressure of the fingers or a light tap of a hammer. The grease is then forced out by screwing up on the handle. A spring lubricant is put up in tube form, making it an easy matter to refill the Tomahawk grease container. Each tube contains sufficient lubricant for 2000 miles.

**Manufactured by Charles W. Manzel Co., 309 Beard Ave., Buffalo, N. Y. Price of Tomahawk Lubricator, $1.25; of Graphite Spring Lubricant, 50 cents a tube.**



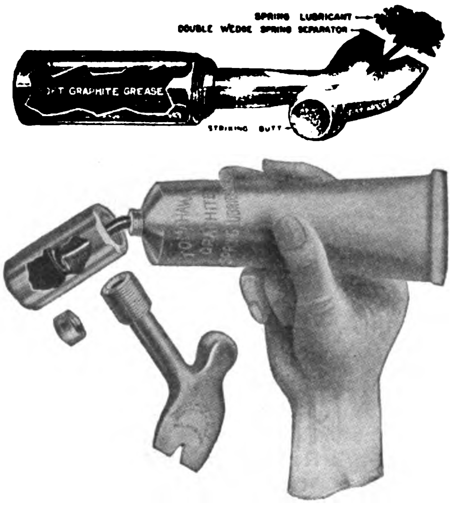
Fordalarm and Fordimmer.



## ADJUSTABLE HOLDER.

The illustration shows a handy and easily adjusted canteen or suit case holder, which may be attached to the running board of any car. This device is adjustable, so that in it may be carried practically any object eight inches wide and less than the length of the running board. Adjustment is secured by wing nuts, which are located on the top of the device. With every holder, which consists of two parts, is furnished a holding strap.

**Manufactured by Leslie E. Moore, 1042 S. Olive St., Los Angeles, Cal. Price, $2.25 per set.**



Tomahawk Lubricator and Grease Tube.

## GEAR SHIFT EXTENSION.

The gear shift lever on practically all of the present day cars is not adjustable, therefore the person with short arms finds that considerable body movement is often necessary to change gears. To obviate this difficulty the Mellin's adjustable gear shift extension has been designed. This device is practically an extension lever, in three sections, that may be adjusted to suit practically any driver and by means of which the operator, with a single arm movement, can shift gears easily and without moving the body. The device is ornamental and neatly finished in nickel plate.

**Manufactured by. M. & H. Novelty Co., 857 East 24th St., Los Angeles, Cal. Price $1.25 or $1.50, according to car.**

## WAY-A-HEAD LIGHT.

The Way-A-Head auto lens, as the name indicates, is designed to concentrate sufficient light on the road way ahead of the car to make riding in the country safe. It is said that typewritten matter may be easily read by the light of this lens at a distance of 400 feet. To accomplish this result the light is guided and controlled by means of 19 long, narrow holes, formed through the body of glass in the lens. Each hole acts as a telescopic tube in passing a narrow beam of light with very restricted spread. For nearby light the centre hub or group of holes is surrounded by a bowl shaped disc of glass, formed in one piece with the center nozzle, with all of its surface frosted, making the softest possible light, yet illuminating both curbs of the street.

A polished plate glass cover, held in place by means of a nickel plated ring, is provided to keep dirt out of the holes.

**Manufactured by Way-A-Head Light Co., Pittsburg, Pa. Prices ranging from $5 to $6.50, according to size.**

## DE-CARBO-CIDE.

De-Carbo-Cide is what may be termed a gasoline tonic and intensifier. The manufacturers guarantee that it contains no chemical or ingredient that can injure, in any way, the motor, carburetor or connections—that it will, if used according to directions, increase mileage, cut fuel bills and prolong the life of the engine

It's so EASY NOW
No More reaching for the gear shift lever
M&H NOVELTY CO.
857 E 24th ST.,
LOS ANGELES

Gear Shift Extension in Use.

by keeping it free from carbon. It is made in tablet form and is mixed with the fuel in the tank. When it is used it instantly dissolves, leaving no sediment. Each tablet treats one gallon of gasoline and one can contains sufficient to treat 100 gallons.

**Distributed by Grace & Co., 32-5 W. Washington St., Los Angeles, Cal. Price, $1 per package.**

### NATHAN COMFYKIT.

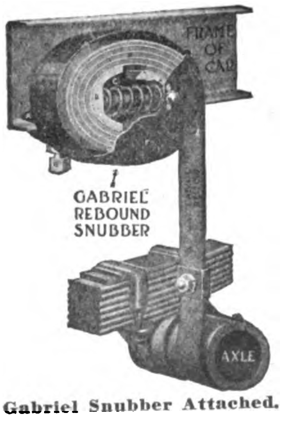
A handy accessory for the traveling autoist, known as the Nathan comfykit, is made of olive drab two-ply waterproof auto cloth, when folded measures 9x5x2¾ inches, and weighs but 24 ounces. The Comfykit, which has specially designed pockets that hold each article in place, is also fitted with loops so that it may be hung up. The following items are contained in the kit: Sanitary wash cloth, card of safety pins, one safety razor, one rubber set collapsible shaving brush, one can of talcum powder and one shaving stick, and six-inch flexible comb, one military hair brush, one can Nathan foot ease, one steel mirror, one package extra buttons, one card of darning cotton and needles, one tooth brush with special guard, tooth paste, one case of zinc oxide adhesive plaster, one sewing outfit, one aluminum soap box and soap and an extra pocket for stationary, pencils, post cards, etc.

**Manufactured by Nathan Novelty Mfg. Co., 84 Reade St., New York City. Price $5.**

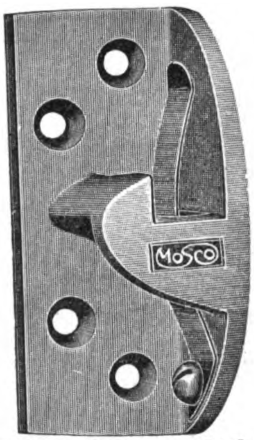
### FORD ANTI-RATTLE DOOR CHECK.

Every motorist of experience is greatly annoyed when squeaks or rattles develop on his car. A common cause for rattle is found in the doors, which are bound to work loose sooner or later. The Mosco anti-rattling door check for Ford cars is a little device, which is made of the exact size of the regular Ford door catch and is used in place of it. When applied to the door frame in place of the regulation catch they provide a sure means for silencing the rattle of the doors. As shown in the illustration the flat spring at the back of the catch provides a resilient buffer against which the door has a bearing.

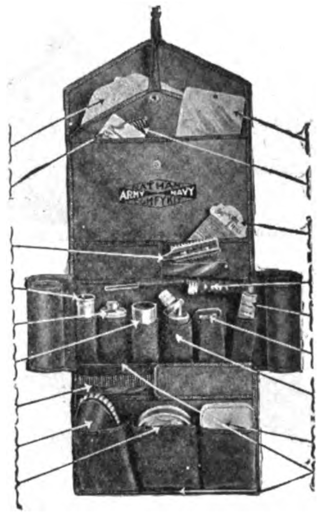
**Manufactured by the Motor Specialties Co., Waltham, Mass. Price $1.25 per set of three, or 50 cents each.**



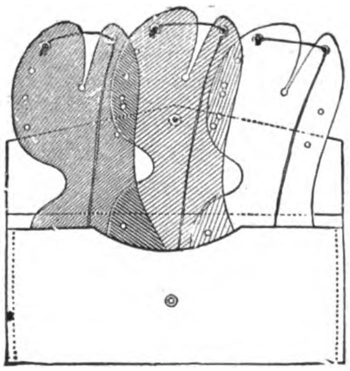
Gabriel Snubber Attached.



Anti-Rattle Door Check.



Nathan Comfykit.



Featherweight Eye Protectors.

### FEATHERWEIGHT EYE PROTECTOR.

A convenient and clear vision eye protector with a number of practical points in its favor is illustrated. This device is made of a flexible material and after being worn a few times fits itself to the face, making it comfortable. It is fitted with adjustable elastic cords and is both strong and sanitary, having no absorbent edges to catch the dirt. It may be conveniently carried in a hand bag with no danger of breaking. The device may be purchased in envelopes with two in the package or in a strong wallet as illustrated, containing three of assorted colors, white, amber and green.

**Manufactured by Jay & Dee Specialty Co., 41 Park Row, New York. Price for envelope of two, 25 cents; wallet of three, 50 cents.**

### DUPLEX FOLDING BASKET.

Conservation of room is the first thought of the motor tourist, who does not care to burden the machine with very many bulky articles. The illustration shows the Duplex folding handy basket, which is made of brown canvas, water proofed, in which may be carried liquids or solids equally well. It is reinforced with spring steel, rust proofed ribs and equipped with double handles and snap hooks for the covers. For campers, fishermen and auto picnics they are ideal, as they may be compactly folded and stowed away under the seat.

**Manufactured by the Planet Co., Westfield, Mass. Prices, $2 and $2.50.**

### GABRIEL SNUBBER.

No car is considered up to date without some form of shock absorber, either as an accessory or incorporated in the design. The Gabriel snubber is an accessory shock absorber which is designed to protect the car by the elimination of vibration, to prolong the life of tires by keeping the wheels on the ground and giving traction. They are easily applied upon practically any car now on the market. When ordering mention the name, model and year of car.

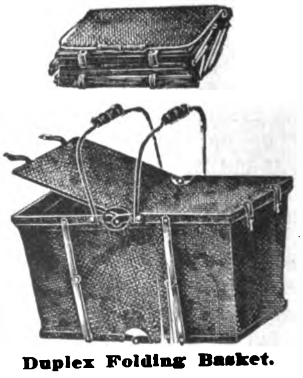
**Manufactured by Gabriel Mfg. Co., Cleveland, O. Distributed in New England by W. J. Connell Co., 171 Massachusetts Ave., Boston, Mass. Prices upon application.**

### TWO NEW APCO PRODUCTS.

The Apco Mfg. Co., formerly the Auto Parts Co., is marketing two new specialties for the Ford car, a horn button attachment and a flag holder. The horn button attachment should appeal to the Ford owner, as it enables the operation of the Ford electric horn, without removing the hands from the steering wheel. The button is designed to be applied to the centre of the wheel and can be attached in a very few minutes.

The Apco flag holder is designed to carry three flags in such a manner that they are displayed to the best advantage. The flag staffs are so crossed that the middle flag can be well displayed, and the holder can be easily attached to the filler tube.

**Manufactured by the Apco Mfg. Co., Providence, R. I. Price for horn button, 25 cents; flag holder, 25 cents.**



Duplex Folding Basket.

## SEEK THERMO REGULATOR.

Every automobile owner has learned that though a rich mixture is necessary for starting, the gasoline may be partially turned off after the engine has "warmed up." Then again the faster the engine runs the greater the amount of heat generated and the less fuel is required in proportion. With these two points in mind the designers of the thermo regulator have designed this device so that varying degrees of heat will raise or lower the needle valve, thereby admitting more or less gasoline into the mixture chamber. To apply the device it is only necessary to remove the needle valve of the carburetor and screw the device into place. After it is once adjusted the regulator automatically provides for a richer mixture for starting, and as the engine is warmed up the mixture is gradually made leaner.

**Manufactured by Seek Mfg. Co., 224 South 24th St., Philadelphia, Pa. Price, $5.**

## HALLADAY STEERING WHEEL.

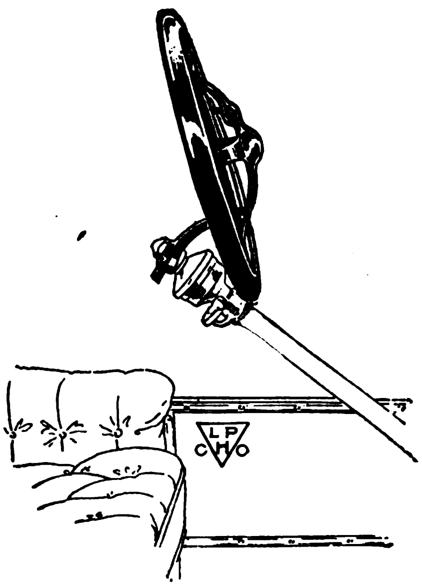
There is a great demand for an adjustable steering wheel for Ford cars for two reasons. First, because such a device permits access to the driver's seat without disturbing the occupant of the other seat; second, because steering is made easier by means of a larger diameter wheel or by corrugations on the wheel rim. The Halladay adjustable steering wheel is attached to the Ford car steering column by the removal of one nut and the steering wheel, and when in place may be folded back by the releasing of a catch on the underneath side. The wheel may be obtained in either of two sizes, 15 or 17 inch, and has either a plain or corrugated rim.

**Manufactured by L. P. Halladay Co., Streator, Ill. Prices furnished upon request.**

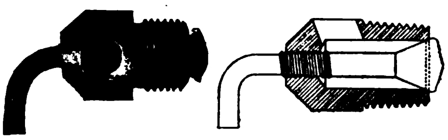
## "HELPING HENRY."

A novel device for the car owner, designed to be used for the utilization of engine power for other purposes than the driving of the automobile is introduced under the name of "Helping Henry." This device consists of a strong channel iron frame upon which is carried a jack shaft fitted with three pulleys and a jacking arrangement of malleable castings fitted with long hand levers by which the rear of the automobile is raised from the ground. The entire weight of the apparatus is 135 pounds and it may be carried on the running board to the place required. The application of the device is simple. It is rolled beneath the rear of the car, the hand levers pushed downward so that the rear is lifted from the ground, which brings the wheels into contact with the pulleys on the end of the "Helping Henry" jackshaft. When the engine is started and the clutch and gears thrown in, the jackshaft turns from the friction of the tires with the pulleys and power may be taken from the third pulley by means of a belt. Different speed ratios may be obtained by changing the gears in the gearset, by throttle adjustment and by the use of different sized pulleys on the jackshaft, making "Helping Henry" a very handy device for all sorts of work.

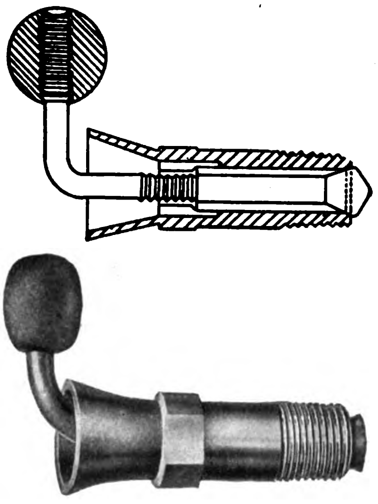
**Manufactured by Autopower Co., La Porte, Ind. Write for descriptive literature and prices.**



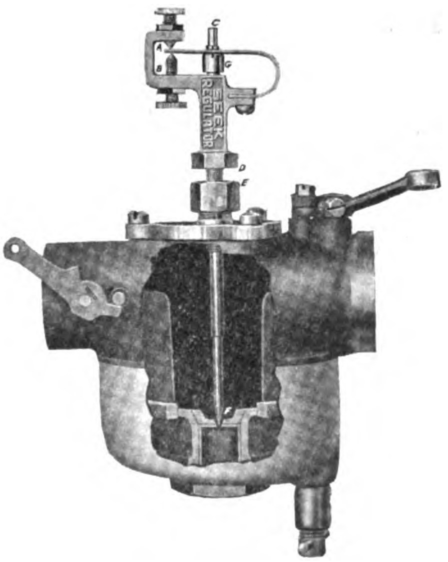
Halladay Steering Wheel.



Britton Drain Cocks.



Britton Priming Cups.



Seek Thermo Regulator.

"Helping Henry" at Work.

## BRITTON DRAIN COCKS.

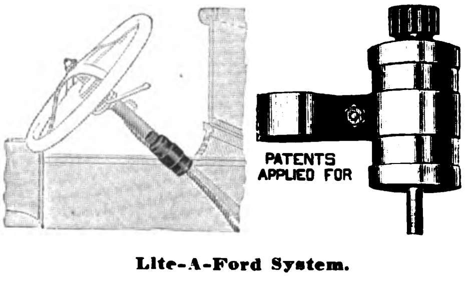
The illustration shows the Britton priming cups and drain cocks. The cross sectional cuts show the simplicity of design and the self-contained features. Any pressure on the stem tends to seat the valve rather than to off-seat it, consequently, as pressure increases, the valve becomes tighter. Due to the combination of the cone seating and threading of the stem, both devices have a self-locking effect.

**Manufactured by Peter A. Frasse & Co., Inc., 417-421 Canal St., New York, N. Y. Prices upon request.**

## LITE-A-FORD SYSTEM.

Every Ford car owner knows just what happens to his lights when the engine speed drops below eight miles an hour—the lights burn dim. The reverse happens when the engine speed increases to such an extent that at times there is danger of burning out the bulbs. If one bulb burns out the other becomes inoperative. The Lite-A-Ford is an intensifying and regulating device for Ford cars with a dimming feature. By a series of coils the current from the engine is strengthened at low engine speed, while the same coils have a reverse action on high speed, causing the current to be retarded. This regulates and equalizes the lights to almost an even density at all speeds. At any time the lights may be dimmed to any degree that is desired by the turning of the knob on the dimmer which is attached to the steering column.

**Manufactured by Hastings Mfg. Co., Hastings, Mich. Price, $2.50.**



Lite-A-Ford System.

### THE COPLEY PRIMER.

The Copley Primer has been designed to meet the demand for a perfected, dependable method of instantaneous starting of cold engines. It consists of a pull knob which may be mounted either on the dash or at the front of the car and the primer body which is connected with the intake manifold. The primer is fitted with a plunger, which normally is closed. When the knob is pulled a venturi passage in the plunger registers with an automatic air intake valve and the suction of the engine as it is cranked draws air through the valve and plunger across a small gasoline inlet. Due to the fact that the venturi passage is small and the suction great, the air is drawn across the gasoline stream at a tremendous velocity, breaking up the fuel and forming a perfect explosive mixture containing a certain amount of gasoline vapor and air.

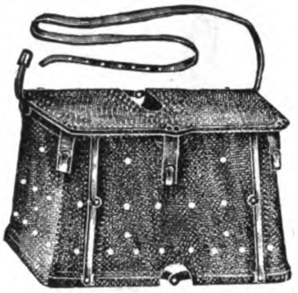
The manufacturers claim that when this device is installed the engine can be started instantly, regardless of temperatures, and that so perfect is the mixture that the engine will continue to run without the help of the carburetor.

**Manufactured by Bay State Pump Co., 100 Purchase St., Boston, Mass. Price $5.**

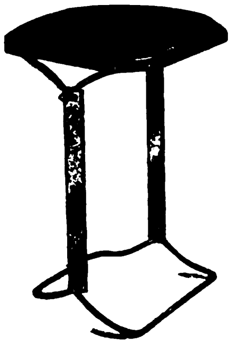
### GAS PEP.

The present day gasoline contains many of the lower test elements that were formerly to be found in kerosene, and for this reason it is not so highly explosive as was the gasoline of previous years. To supply certain explosive properties has been the problem which many automobile experimental men have tried to solve. Gas Pep is said to offer a solution to this problem, since it supplies certain elements necessary to make gasoline more efficient. The manufacturers claim that this compound, when used in gasoline, results in more power and a smoother running engine. Gas Pep is put up in crystalline form and is guaranteed to contain nothing that will result in damage to the engine. One teaspoonful of the crystals dissolved in five gallons of gasoline is the proportions used in energizing the fuel.

**Manufactured by the Nitrated Chemical Co., 112 N. Front St., Kingston, N. Y. Box containing enough for 150 gallons of gasoline $1. Agents write for proposition.**



Duplex Fishing Creel.



Buffington Folding Stool.

### UPHOLSTERED FOLDING STOOLS.

The Buffington folding upholstered stools are made with seats upholstered in imitation leather, black or maroon, tufted with hair and measuring 11 inches square. The seat is made of three ply, one-half inch veneer and the manufacturers state that they will not warp or break.

**Manufactured by C. A. Buffington & Co., Berkshire, N. Y. Prices upon request.**

### BUFFINGTON FOLDING CHAIR.

The illustration shows a folding chair that weighs only nine pounds and can be folded into a space three inches thick. Such a seat is especially adaptable to small cars when an extra passenger is to be carried. The seat comes finished in Japan and may be had in a number of sizes.

**Manufactured by C. A. Buffington & Co., Berkshire, N. Y. Prices upon request.**

### THE FOGGER.

The Fogger is an automatic device for introducing live steam into the fuel of internal combustion engines as a means to remedy the carbon deposit evil. It consists of a housing containing two chambers separated by a diaphragm. The upper chamber, which is termed the vacuum chamber, is connected with the intake manifold; the lower is connected with the water circulating system, and, through the exhaust manifold, with the intake. It is also fitted with drain cock and air intake connection. The vacuum, from the impulse of the engine acting on the diaphragm, opens and closes the needle valve by which the water is admitted. This operation allows water and air to be admitted from the chamber to the intake manifold, and pass through the heating pipe in the exhaust manifold, where the mixture is heated, producing steam.

Elimination of carbon deposit, saving of fuel through more perfect combustion and increased power are some of the advantages claimed for the device.

**Manufactured by Motor Steam Generator Co., 417 Heed Bld., Philadelphia, Pa.**

### 3A COMPANY FLAG HOLDER.

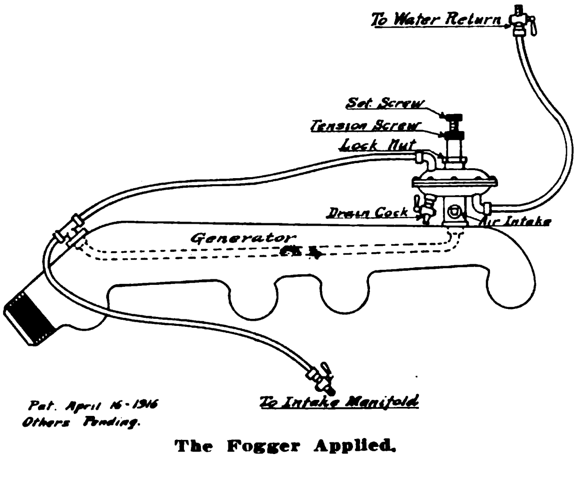
There is a great demand for an inexpensive flag holder that will fit practically any automobile, and it is claimed that the 3A Company Flag Holder meets this demand. This flag holder is made of polished nickel plated steel and clamps around the radiator filler pipe of practically any car. Each device is supplied with a lock washer and bolt.

**Manufactured by American Automobile Accessories Co., Cincinnati, O. Price, 25 cents.**

### DUPLEX FISHING CREELS.

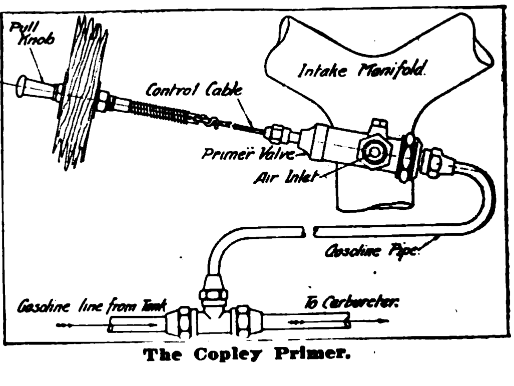
Duplex Fishing Creels are made of heavy waterproof canvas, reinforced with spring steel, rust proofed metal ribs and fitted with covers that fasten with pull down snap hooks. Air circulation is secured by metal eyelets inserted in front, sides and bottom and through the hole in the top. These creels may be kept sweet and clean by scalding in water, as by this process the fabric is not damaged. They are so designed as to permit folding and may be carried in the pocket or tackle case when not in use.

**Manufactured by the Planet Co., Westfield, Mass. Write for prices.**



The Fogger Applied.

Buffington Folding Chair.



The Copley Primer.

# THE STORY OF A SUCCESSFUL MAN

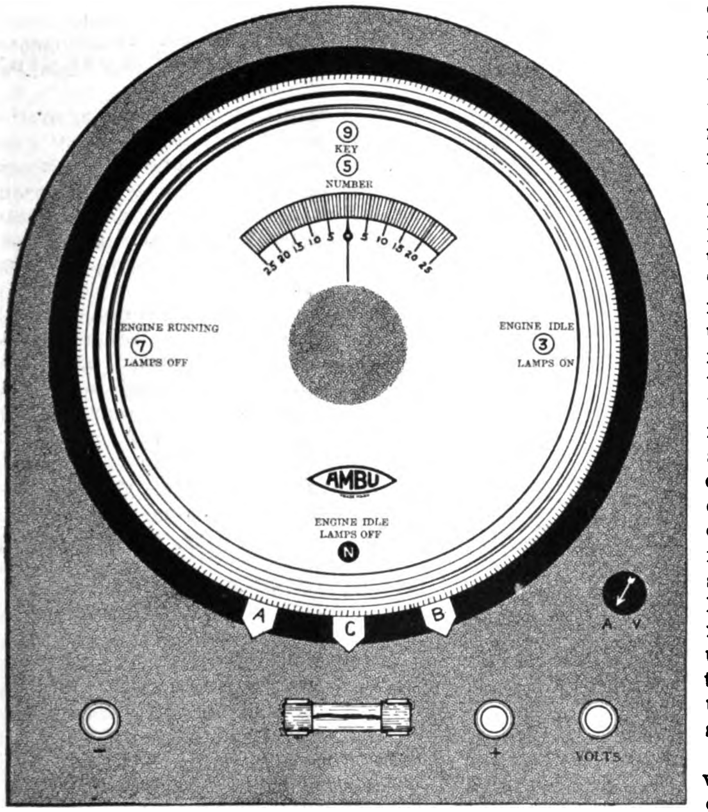
## Specializes With a Mechanical Trouble-Finder on Repairs of Electric Starting and Lighting Systems

J. S. Ellis in His Shop, Oakdale, Cal.

As a general rule the reason for one's success may be traced to circumstances, ability or equipment, and attention to details, and the story of J. S. Ellis of Oakdale, Cal., is no exception to the rule.

Mr. Ellis lived in the little town of Oakdale, which has a population of 1050, and after looking over the situation decided that though there were automobile repair shops making a business of general repair work, he would specialize and give the public service for the repair of electric starting and lighting systems.

He decided that the successful operation of the automobile depended upon the electrical installation, and that the repair of the system demanded the work of a specialist.



Dial of Ambu Trouble Shooter, Made by the American Bureau of Engineering, Chicago, Ill.

His first move after his decision was to purchase a complete Ambu outfit. He realized that only by giving complete satisfaction could he hope to get the business. This meant that he could make absolutely no mistakes nor afford to try a guess on any job brought to him, if he wished to keep his reputation as an expert. He bought his equipment with especial attention to this policy. At the present time Mr. Ellis says that he has all of the business that he can attend to and from the business is earning a fine income.

As every repair man knows, at the present time there are hundreds of different starting and lighting installations of various types, no two of which may be compared in any way but essentials. For one man to become familiar with all of the various systems would take years, and by that time as many more systems would probably spring up. Without definite knowledge of all of the systems, practical tests and repairs would consume many hours of valuable time and cause dissatisfaction among the customers.

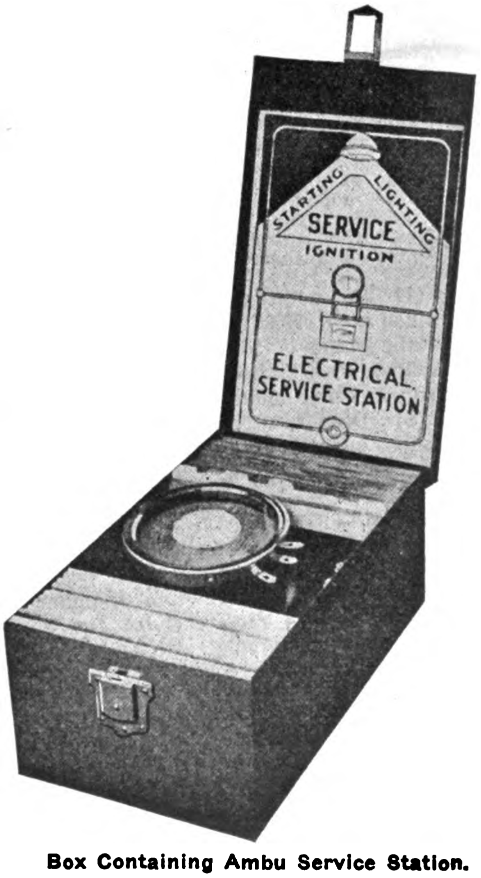
Through Mr. Ellis' attention to detail and foresight the business has prospered from the start, despite the small population, and Mr. Ellis gives due credit to Ambu, because the use of it gave him confidence to go after repair jobs, with the assurance that the finding of trouble would be a matter of minutes, rather than hours.

That Mr. Ellis' experience may be duplicated in other towns is possible. The success of the repair man depends upon his work. This means that to give the results he must be able to do the job not only well, but in a minimum amount of time. Many of the ordinary repairs to electrical systems require but a few seconds. To insulate a grounded wire requires but a minute, yet it frequently takes hours to locate the trouble, without suitable apparatus.

The device to which Mr. Ellis gives credit is an apparatus which has been designed along scientific lines, and may be operated by the average lay man. It consists of the "trouble chaser," which is a specially designed volt ammeter, a set of instructions covering practically every electrical system now on the market, and a set of wiring diagrams of present day cars, as well as many that are "orphans."

For special systems a special form of procedure in testing is necessary, and this form is carefully laid out in the book of instructions. The repair man simply familiarizes himself with the method of testing, then he makes his tests. As each test is made, if there is trouble, a number appears upon the "trouble chaser," which indicates a certain section in the instruction book. Under this section is given the troubles that might result in the reading given on the "trouble chaser." Sub-headings and special tests locate the trouble so that there is no doubt in the mind of the repair man. Should there be no trouble under that particular heading the "trouble chaser" indicates normal, and further tests are made, until the trouble is located.

The charts, diagrams and instructions are so laid out that the location of faults in the systems are merely a matter of routine, not requiring any special knowledge of electrical installation on the part of the operator.



Box Containing Ambu Service Station.

# *U. S. Automobile Manufacturing Census*

**Figures Announced on Department of Commerce Survey Made Three Years Ago.**

Returns on the census of manufactures of automobiles taken in 1914 by the United States government have just been issued by the Department of Commerce. Reports received from 1271 manufacturers, including bodies and parts, furnish the data for this bulletin. While there have been numerous changes in the interim, this authoritative compilation presents many interesting phases. Of the manufacturers reporting, only 300 then made complete automobiles, which contrasts with the statement presented to Congress recently by the industry's representatives, showing 450 automobile and motor truck plants in 1917. The statistics of the industry for the current year, in the National Automobile Chamber of Commerce compilation, printed in a previous issue of this magazine, may readily be referred to for other interesting comparisons.

The following table summarises the more important figures secured by the census:

| | Total (1) | Automobiles (2)<br>Automobiles | Automobiles (2)<br>Bodies and Parts |
|---|---|---|---|
| Number of establishments | 1,271 | 300 | 971 |
| Persons engaged | 145,951 | 91,997 | 53,954 |
| Proprietors and firm members | 760 | 60 | 700 |
| Salaried employees | 18,099 | 12,630 | 5,469 |
| Wage earners (average number) | 127,092 | 79,307 | 47,785 |
| Primary horsepower | 173,684 | 104,983 | 68,701 |
| Capital | $407,729,915 | $312,875,884 | $94,854,031 |
| Salaried and wages | $139,652,553 | $84,900,520 | $54,552,033 |
| Salaries | $37,525,679 | $17,966,161 | $19,559,518 |
| Wages | $101,926,874 | $66,934,359 | $34,992,515 |
| Paid for contract work | $3,954,924 | $3,768,809 | $186,115 |
| Rent, taxes (including internal revenue) | $5,152,314 | $3,331,311 | $1,821,003 |
| Cost of materials | $356,207,930 | $292,597,565 | $65,610,365 |
| Value of products (2) | $632,831,474 | $503,230,137 | $129,601,337 |
| Value added by manufacture (value of products less cost of materials) | $276,623,544 | $210,632,572 | $65,990,972 |
| Number of automobiles made | 569,054 | 568,781 | 273 |
| Value of automobiles | $458,957,843 | $458,760,916 | $196,927 |

(1) In addition 3985 automobiles, valued at $6,099,631, and bodies and parts to the value of $11,045,205 were manufactured by establishments engaged primarily in other industries.

(2) Does not include tires, engines, lamps, springs and electric motors and starting and lighting systems.

### ELIMINATION OF ALL MUFFLER CUTOUTS URGED.

The National Automobile Chamber of Commerce has recommended the elimination of all muffler cutouts from all cars built in this country after Jan. 1, 1918. The members consider that the cutouts have no mechanical value and only serve to increase the noise attending the operation of a car. It was also announced that nearly half of the 110 members of the association have already ceased installing the cutouts on their cars.

The announcement was made following the meeting of the directors of the National Automobile Chamber of Commerce at which the Webb-Pomerene bill now before the Senate was indorsed. Hugh Chalmers, president of the Chalmers Motor Company, was elected first vice president of the organization to succeed W. C. Leland, and H. H. Rice, treasurer of the General Motors Company, was elected vice president of the gasoline division to succeed Mr. Chalmers.

### U. S. MOTOR TRUCK CO. GIVES DINNER AT COVINGTON.

The United States Motor Truck Co., Cincinnati, O., gave a dinner recently to the members of the organization of the U. S. Truck Sales Co., Cincinnati, O. An old fashioned Kentucky dinner was served in the Industrial Club, Covington, Ky., after which officials of both organizations discussed the sales outlook.

Forrest J. Alvin, general manager and director of sales of the United States Motor Truck Co., reviewed the work of the organization in the past year and also of the prospects for the coming season. Arthur W. Peck, president of the truck sales company, spoke of the sales campaign in Cincinnati and Northern Kentucky.

Others present at the dinner were: R. C. Stewart and R. S. Stewart, president and vice president respectively of the United States Motor Truck Company; assistant general manager, E. S. Lee, Jr.; chief engineer, E. C. Shumard; Ralph H. Jones of the Ralph H. Jones Company, advertising agents, and Messrs. Roberts, Wessels and Hays of the U. S. Truck Sales Company.

### ELGIN MOTOR CAR CO. IN N. A. CHAMBER OF COMMERCE.

The Elgin Motor Car Co., Detroit, Mich., has been elected to membership in the National Automobile Chamber of Commerce.

### ESTABLISH FORD BRANCH IN WILMINGTON, DEL.

The Ford Motor Car Co. has sent Fred B. Norman of Des Moines, Ia., to Wilmington, Del., where he will superintend the establishment of a Ford branch and service station.

# *Chalmers Financing Plan Ratified By Stockholders*

**Lease to Maxwell Motor Co. for Five-Year Period Included in Approval.**

At the special meeting of the Chalmers Motor Corporation the stockholders ratified the refinancing plan, which calls for an issue of $3,150,000 six per cent. five-year notes to be offered to stockholders of the 264,000 shares of the corporation, each holder subscribing to receive one share of eight per cent. preferred stock for every three shares of present stock to the extent of one-half his present holdings and including the provision that the corporation's plant be leased to the Maxwell Motor Co. for a period of five years.

### GENERAL MOTORS SALES GAIN OF 54 PER CENT.

The General Motors Company during the first month of the new fiscal year, August, made a gain of 54 per cent. in sales as compared with the corresponding month a year ago. In that month the sales totaled 18,117 cars and trucks, as compared with 11,717 in the same month in 1916.

The Buick sales constituted the bulk of the August business, totaling 10,874, as compared with 8461 last year. The Oldsmobile is second with 2773, compared with 786 last year, and the Oakland sales in August were 2668, against 2133 in 1916. An enormous increase was shown in the Cadillac sales during August, 733 being distributed, as against 99 in the same month last year.

### SAXON MOTOR EARNINGS OFF NEARLY 50 PER CENT.

The Saxon Motor Car Corporation for the fiscal year ending June 30, 1917, had a balance available for dividends of $663,768, as compared with $1,316,273 at the end of the fiscal year in 1916.

The corporation's balance sheet as of June 30, 1917, compares as follows:

| ASSETS. | 1917 | 1916 |
|---|---|---|
| Plant and equipment | $862,369 | $73,914 |
| Investments | 6,000 | 7,500 |
| Cash | 196,825 | 596,722 |
| Notes and accounts receivable | 2,072,623 | 392,830 |
| Inventory | 4,593,664 | 2,134,327 |
| Deferred charges | 50,649 | 18,143 |
| Good will, models and patents | 4,557,229 | 4,557,229 |
| Total | $12,339,361 | $7,780,665 |
| **LIABILITIES.** | | |
| Capital stock | $6,000,000 | $6,000,000 |
| Notes and accounts payable | 5,077,521 | 907,222 |
| Reserve for contingencies | 100,000 | ...... |
| Surplus | *1,161,840 | 873,443 |
| Total | $12,339,361 | $7,780,665 |

---

*No provision has been made in respect of excess profits tax.

# *Don't Ship Goods by Express Without Stating the Valuation*

THE United States Supreme Court has handed down a decision in a case against the Adams Express Company, which gives me a timely opportunity to emphasize a thing which shippers of merchandise by express have got to look out for if they want to make full collection if their property goes astray or is damaged en route.

I refer to the matter of stating, at the time of shipment, the full value of the merchandise shipped, and paying a rate based on that value The express companies are apt to rate everything at $50, because under the iron-clad contract which they make with the shipper, if anything happens to the goods they need only pay $50, even though the damage is many times that.

In the case I refer to, a shipper shipped some valuable stuff by Adams Express, but allowed the express company to set its own value on it. Of course this value was low, as it will always be if it is left to the express companies to fix it. The goods were destroyed en route and the shipper sued for the real value. The company pointed to the express receipt, which he had signed, probably without looking at it, in which he had allowed the company to fix the value at far below the actual value. This attitude meant a loss of several hundred dollars for the shipper. He sued in the lower court, which decided in his favor. The company then carried the case clear to the United States Supreme Court, which reversed the lower decision and decided against him. From the long opinion I reproduce the following:

> The printed form of contract (express receipt) which was declared on and made a part of the complaint contained a caption under a title "Notice to Shippers," directing their attention to the fact that they must value their property to be shipped and that the charges for transportation and the sum of recovery in case of loss would be based upon valuation.
>
> As from what we have said it follows that the shipper should not have been permitted, after obtaining the lowest possible rate based upon a valuation to which his right of recovery in case of loss was limited, to recover upon the happening of the loss an amount wholly disproportionate and inconsistent with the rate paid contrary to the express terms of the contract, it results that the judgment below must be and it is reversed and the case remanded for further proceedings not inconsistent with this opinion.
>
> And it is so ordered.

In other words, this is the theory on which the express companies work and the theory which is upheld by the Supreme Court: "We make a rate based on the presumption that everything shipped will average no more than $50 in value. We charge a rate based on a $50 value. If merchandise shipped by us is worth more than $50, we must charge a higher rate for it, because the risk is greater—if we lose or damage it, we will have to pay more." Therefore they insert the following clauses in their contract or shipping receipt:

**If you are in need of legal advice, if you want first-class professional service at no cost to yourself, address a letter to Mr. Buckley, in care of the Legal Department of the Accessory and Garage Journal, detailing the issues as clearly as possible. By special arrangement with this journal he will give immediate answer, either on this page for the benefit of other subscribers who may have the same trouble, or direct by mail as the inquirer specifies. Sign full name for the purpose of correspondence, not for publication. This service is free to subscribers to this magazine.**

> 2. The rate charged for carrying said property is dependent upon the actual value of the property, which must be specifically stated in writing by the shipper, and applies only upon property of an actual value not exceeding $50 for any shipment of 100 pounds or less, or not exceeding 50 cents per pound, actual weight, for any shipment in excess of 100 pounds. If the actual value is greater than $50 for any shipment of 100 pounds or less, or exceeds 50 cents per pound actual weight for any shipment in excess of 100 pounds, such actual value must be specifically stated in writing by the shipper, and excess charges for such greater value must be paid therefor in accordance with the lawfully published tariffs of the company.
>
> Note—The company's charges are based upon the character of the property, of which its value is an element, and its value must be declared in writing by the shipper unless its character is otherwise disclosed. When goods are hidden from view by wrapping, boxing or other means, and the company is not notified of the character thereof, the shipper's declaration of value may be made by notation, "not exceeding $50" or "not exceeding $50 or 50 cents per pound, actual weight."

The whole thing is up to the shipper. If he says nothing about the value, it stays in the contract at $50, and $50 is all he can get if his property is lost or damaged. If the company's agent asks him about the value, and as is often done, says, "I'll just put it down as $50," the situation is the same and his damages cannot exceed $50.

Everybody who ships goods by express should declare a value on them which is as near the full value as he can fix, and should pay the rate which goes with that value. On most articles which do not weigh or bulk largely, the rate on the actual value will be greater than that on the $50 value which the company would fix. But the difference would be comparatively slight, and would be cheap insurance against having to collect a mere fraction of the actual damage if anything happened.

The express companies recognize the prevalent desire to get as low a rate as possible, and they know that a lot of short-sighted people in order, as they think, to get a low rate, will be careless about properly valuing their shipments. They utilize that human failing to their own advantage, and through it have saved hundreds of thousands of dollars in damages. Not long ago a client of my own came to me with a claim against the express company. He had shipped some valuable diamonds, worth about $800, without placing any value on them at all. They were lost and when he demanded to be paid in full the company showed him his signature on a shipping contract containing the above provisos.

"How shall I get around it?" he asked me.

After getting into it I was obliged to advise him that he could not get around it. He said his reason for not declaring the proper value was that "the company would sting him on the rate."

Many persons—even hard headed business men—have the same peculiar view, figuring that the chance that anything will happen to their shipment is very remote, and that money spent on the higher rate would therefore be wasted.

Very frequently a retail dealer, wishing to have goods shipped by express instead of by freight, will instruct the jobber or the manufacturer from whom he is buying to ship by express, without giving specific instructions that the full value should be stated and the full rate paid. In one case a jobber's shipping clerk, seeking to favor the firm's customer by getting the lowest rate he could, allowed the value of a $300 shipment to go in as $50. The goods were lost and all the consignee got was $50, for the court held that the jobber acted as his agent in what he did.

(Copyright, 1917 by Elton J. Buckley.)

**Executives of the Detroit Truck Company. From Left to Right: President and General Manager, Fred Paterson; Sales Manager, Harry A. Conlon; Advertising Manager, D. F. Whittaker; Purchasing Agent, H. E. Pierce, and Factory Manager, E. A. Haskins.**

# DETROIT TRUCK CO. IN NEW PLANT

## Makers of Tonford Conversion Units Established in Fine Building, 28,500 Units Annual Capacity

The Detroit Truck Co., Detroit, Mich., makers of the "Tonford" conversion units for use with a Ford chassis has established itself in a new factory with 220,000 square feet of floor space and a production capacity of 28,500 units annually. Located opposite the site chosen for the Pennsylvania railroad terminal in Detroit, the factory is conveniently accessible to all shipping points as well as to the business section of the city.

With its strong executive and sales organization the company's business has been progressing at a rate that has made it necessary to provide for even further expansion of its new plant. Headed by president and general manager Fred Patterson the organization includes, sales manager Harry A. Conlon; advertising manager D. F. Whittaker; purchasing agent H. E. Pierce and factory manager E. A. Haskins. All these men are experienced and successful graduates of the motor truck industry. Mr. Conlon was assistant sales manager and field sales manager for the Federal Motor Truck Co. for several years and Mr. Whittaker was for two years assistant advertising manager of the same company. Mr. Haskins is also a Federal graduate having been service manager of the company for several years. H. E. Pierce was purchasing agent of the Regal Motor Car Co. for ten years.

The Tonford units are designed to convert Ford chassis into vehicles and are made in two types, a chain driven and internal gear drive units. The roller bearings are the best obtainable and are heavier than those used in the average one-ton truck. A feature of the design is that when assembled with the chassis the unit will have practical truck construction. The jackshaft sprocket of the chain driven unit is distinctive, being a split type fitted over the Ford rear axle (used as a jackshaft) inside the brake flanges, so that the axle housing is not cut and the "bell" form of sprocket, that encloses the brake flange, is not used. With this form of sprocket the driving stresses of the chains are inside the jackshaft ends and there is ample road clearance, while the tread of the rear wheels is the same as the rear. The jackshaft is unchanged, so that it may be used again as a rear axle whenever there is need of reconverting the chassis.

The Tonford internal gear unit is constructed with a Torbensen drive axle, in which the load is carried on a dead I section axle, to which a jackshaft is secured, the ends of the jackshaft housing being carried by the brake flanges. The drive is from the jackshaft pinions to internal ring gears on the wheels, and the pinions and gears are thoroughly enclosed and lubricated with grease.

In following out the policy of building quality into the "Tonford" the company has not only selected the finest quality of materials and parts, but the manufacturing and assembly of the unit is handled by the highest skilled mechanics as indicated by the fact that the employees of the company receive a higher average wage than is paid to men in similar employment in the highest class motor companies.

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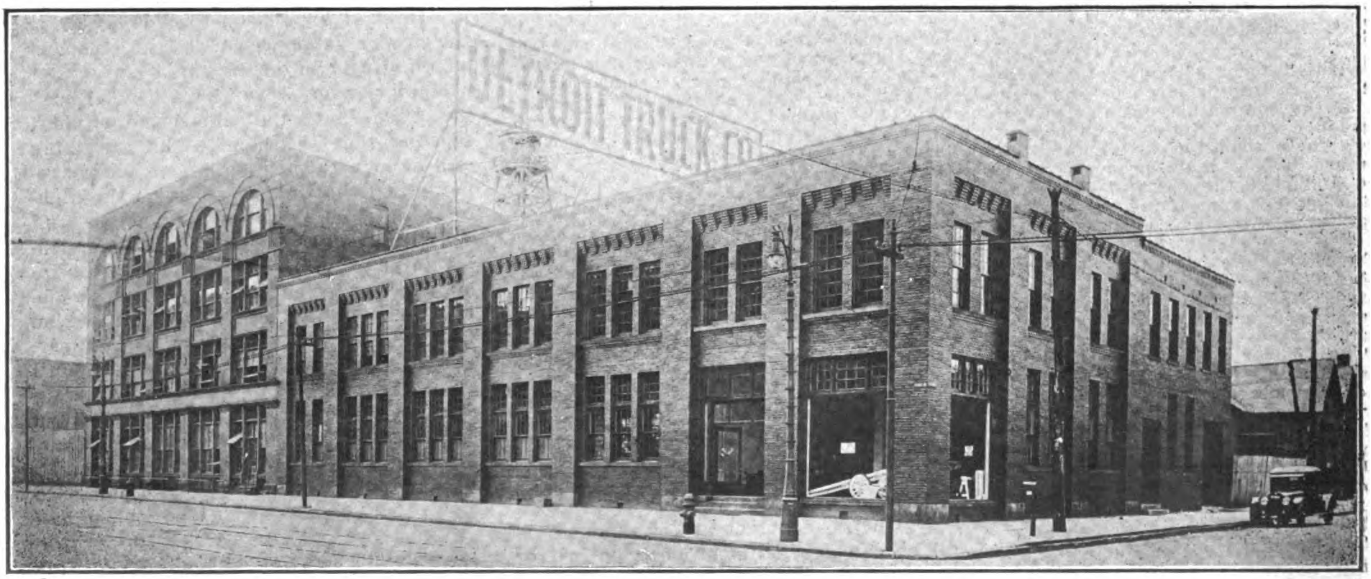
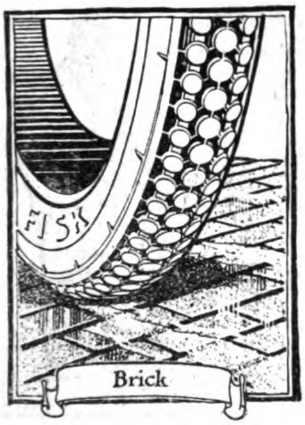
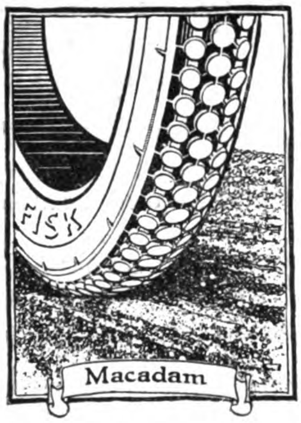
The River Rouge tractor plant and blast furnaces of Henry Ford & Son, which are to be erected during the coming year, will cost $20,000,000, of which amount $8,000,000 will be expended for labor alone.



**The New Factory of the Detroit Truck Company, Which Has 220,000 Square Feet of Floor Space and Is Splendidly Equipped for the Production of Tonford Conversion Units.**

# FISK TIRES





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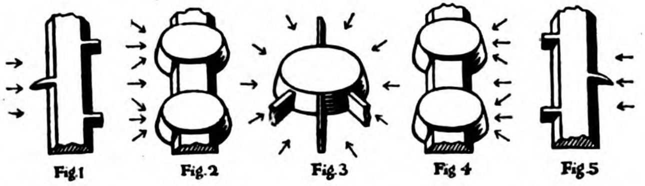
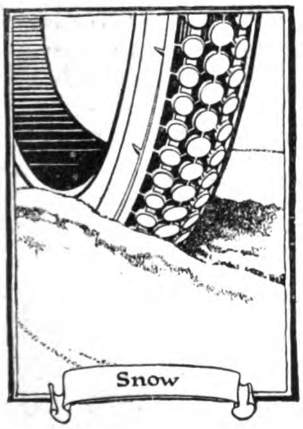
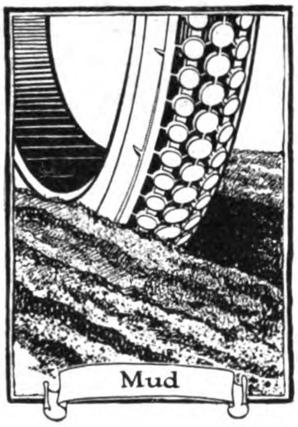


*Fig. 1 is the outside rib that makes an uninterrupted counter against direct side slipping or skidding—Fig. 5 is the same protection on the other side of the tread.*

*Fig. 2 is the outside row of buttons, connected by a second rib of solid rubber. The buttons, which are slightly higher than the connecting rib, offer perfect resistance against skidding and, because they grip the road so firmly, make the pull forward in soft ground ever so much more positive and certain—Fig. 4 has these identical qualities, but from the opposite directions.*

*Fig. 3 is the master button around which the Fisk Non-Skid tread is constructed. It supplies resistance against slipping in any direction—no matter which way there is a tendency to skid there is always a flat resisting surface to prevent that skidding, and to assist the sure forward movement of the wheel.*





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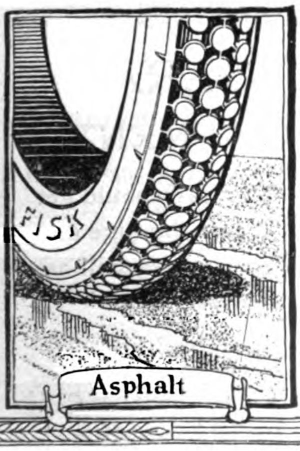

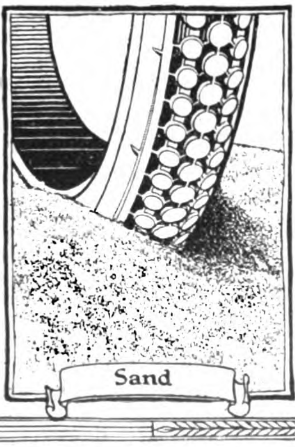

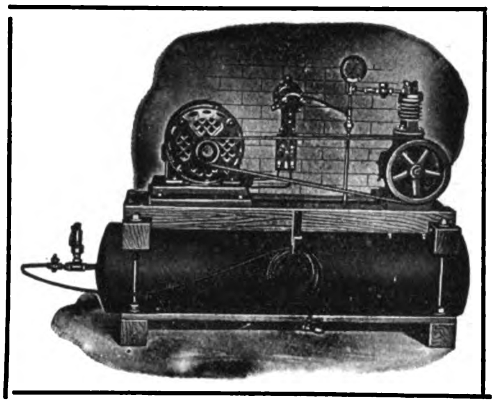

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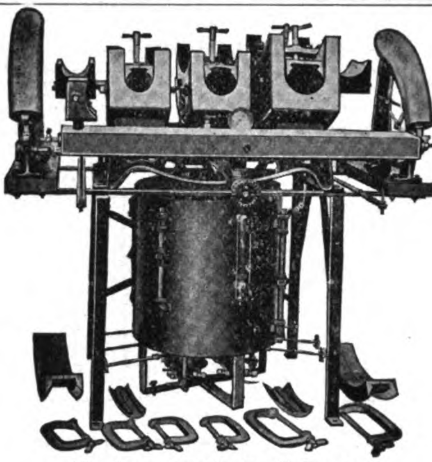

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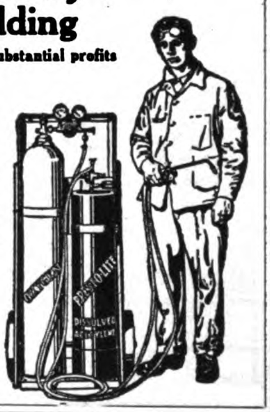

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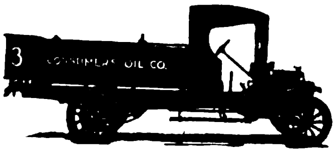

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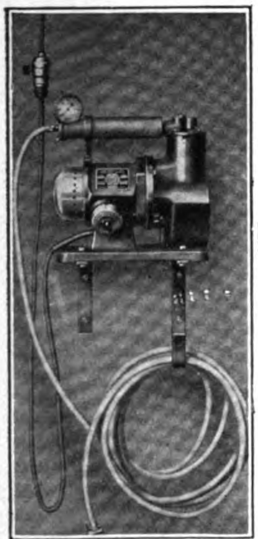

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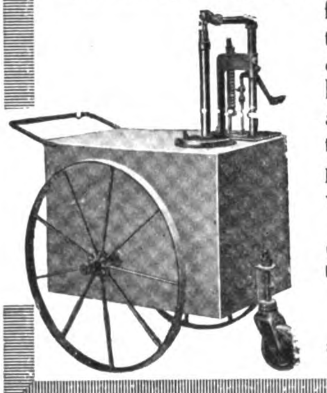

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Published the 15th
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D. O. Black, Jr., Secretary
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|---|---|
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|---|---|
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**SERVICE GEAR & MACHINE CO.**
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## INDEX TO ADVERTISERS

Page
A. B. C. Starter Co............Cover
Adamson Mfg. Co.................57
Advance Auto Accessories Corp.... 9
Aerofram Co., The................59
American Motors Parts Co.........54
Apperson Bros. Automobile Co.....64
Automobile Accessories Co........54
Auto Parts Co....................54
Auto Salvage Co., Inc............55
Auto Wrecking Co.................54

Ballmann-Whitten Mfg. Co.........62
Bay State Pump Co................58
Bearings Service Co..............4-5
Black & Decker Mfg. Co...........53
Bowser & Co., Inc., S. F.........53
Brunner Mfg. Co.................. 1
Buell Co.........................63
Butler Mfg. Co...................54

Champion Ignition Co............. 7
Continental Auto Parts Co........63
Croft Elec. Co...................54

Detroit Battery Co...............52
Detroit Magneto Exchange.........54
Detroit Truck Co.................52
Dixon Crucible Co., Jos..........58
Dyer Co., G. H................... 3

Faw, Inc., J. H..................53
Fisk Rubber Co...................51
Fitzgerald Mfg. Co............... 2

Garford Motor Truck Co...........56
Gardner Governor Co..............52
Gibson-Hollister Mfg. Co.........56
Greenfield Tap and Die Corp......64

Harvey Spring Co.................59
Haywood Tire and Equipment Co...62

International Metal Polish Co....61
International Lubricants Co......62

Jandorf Automobile Co............55
Jenkins Vulcan Spring Co.........56

Mabeys' Electric and Mfg. Co.....61
Martin Mfg. Co...................59
Mossberg Co., Frank...........Cover
Motor Specialities Co............64
Motorists Accessories Co.........55
Mueller & Co., R. S..............64

**Ford Size Tires**
**New 30x3½ Non-Skid**
**$7.50**
**Jandorf Automobile Co.**
**1763 Broadway, New York**

**MONOGRAMS!!!**
**CAR AND MOTORCYCLE OWNERS BUY AT SIGHT.**

Rich, artistic designs that ornament any machine and are guaranteed to last as long as the vehicle finish. Can be quickly attached by anyone. Full stock assortment for small investment and each sale yields a big profit. Write today for catalogue and quotations. This is a great business opportunity for road men. Act quick—whole story by return mail.

**MOTORISTS ACCESSORIES CO.**
**Mansfield Ohio**

**Mr. Garage or Repairman**

Write us for our special discount proposition to you. Our big business has been the result of your co-operation and we are now in a position to partly repay you.

Write our nearest branch.

**AUTO SALVAGE CO., INC.**
St. Louis, Mo., 2823-5 Locust.
Kansas City, Mo., 1701 Main St.
Cincinnati, O., 314 E. Third St.

***Do You Want Foreign Business?***

The Motor Vehicle market of the world is open to all American producers of cars, trucks, parts, fittings, supplies, accessories, mechanical and electrical equipment and tools.

We operate the only direct and certain channel through which to reach this market. This is available to every manufacturer who is seeking foreign agents or correspondents and is preparing for "after-the-war" business.

FOR FOREIGN BUSINESS ACT TODAY.

**Automobile Journal Pub. Co.** **Times Building, Pawtucket, R. I.**

## INDEX TO ADVERTISERS
(Continued)

Page
National Cash Register Co......... 8
New Departure Mfg. Co............62
New Era Spring and Specialty Co...63
Niehoff & Co., Inc., Paul G.......61
Norma Co. of America.............57

Pierce Governor Co...............56
Pillsbury Mfg. Co................60
Poughkeepsie Utilities Corp......58
Prest-O-Lite. Co., Inc...........52
Puritan Machine Co...............54

Ross-Gould List and Letter Co....56

Scaife, Wm. B. & Sons Co.........52

Page
Schrader's Son, Inc., A..........63
Service Gear and Machine Co......54
Shotwell Pump and Tank Co........61
Standard Woven Fabric Co.....Cover
Starrett Co., L. S...............10
Stevens & Co.....................62
Stockbridge Body Co..............60
Sullivan Motor Car Co............56

United Engine & Mfg. Co..........52

Vanderpool Co....................52

Walden-Worcester, Inc. .......Cover
Weston Electrical Instrument Co...63
Williams Foundry and Machine Co..64
Whittier Co. ....................58

THE AUTOMOBILE JOURNAL

*Is the oldest Automobile magazine published in America devoted wholly to owners of pleasure cars.*

A QUALITY MAGAZINE WITH PRESTIGE AND CIRCULATION THAT BRINGS RESULTS TO ADVERTISERS

*TIMES BUILDING - - - - PAWTUCKET, R. I.*

Garford MOTOR TRUCKS

Trucks of 1, 1½, 2, 3½, 5 and 6 ton capacity. 4½, 7 and 10 ton Tractors.
The Garford Road Builder.

**THE GARFORD MOTOR TRUCK CO., Lima, Ohio.**

PIERCE GOVERNORS

are a positive guarantee of motor truck efficiency, because they provide automatic speed control. Now standard equipment

**On 64 Makes of Motor Trucks**

No better proof of superiority could be offered.

**PIERCE GOVERNOR CO., Anderson, Ind.**

Do Business by Mail

It's profitable, with accurate lists of prospects. Our catalogue contains vital information on Mail Advertising. Also prices and quantity on 6,000 national mailing lists, 99% guaranteed. Such as:

War Material Mfrs.
Cheese Box Mfrs.
Shoe Retailers
Auto Owners
Wealthy Men
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Doctors
Axle Grease Mfrs.
Fly Paper Mfrs.
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Farmers
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Write for this valuable reference book. Also prices and samples of Fac-simile Letters.

*Have us write or revise your Sales Letters.*

Ross-Gould, 1015K Olive Street, St. Louis

**Ross-Gould Mailing Lists St. Louis**

JUMBO
MOLITE
MADE IN U.S.A.

NO MORE RUST!

The clean, non-rusting, non-corroding "NONCORO" FINISH on JUMBO SPARK PLUGS means absolute freedom from rust throughout the life of the plug. This new finish is a handsome gray which still further enhances the value of the world's super-plug.

**The 50 Cent Price**

makes Jumbo Spark Plugs the most profitable buy for dealer and driver.

*DEALERS! Get in touch with your jobber now!*

**Gibson-Hollister Mfg. Co.**

Central States Branch St. Louis, Mo. SPRINGFIELD, MASS.

SELL SULLIVAN TRUCKS

One of the few staple and practical trucks on the market.

Our selling policy and proposition is the most liberal ever offered to the trade.

**One Model, 3,000 Lbs. Capacity**
**Chassis Price, $1,600**

*Write for complete details*

SULLIVAN MOTOR CAR CO.
Rochester, New York

90,000 SPRINGS 90,000

VULCAN
QUALITY

588 TYPES—IN STOCK—FOR EVERY CAR
DISCOUNTS LIBERAL—SERVICE UNEXCELLED

**Jenkins Vulcan Spring Co.**

Display Rack Free with Order For 12 Assorted

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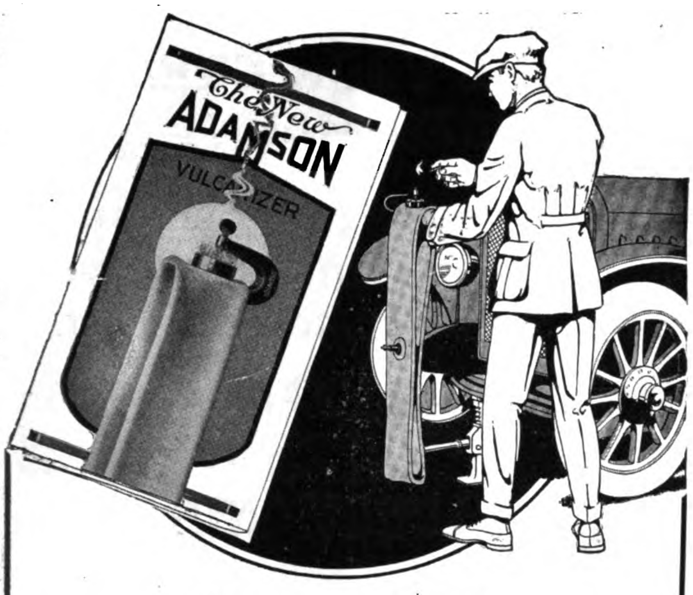
Minneapolis, Minn. 1024 Hennepin Ave.
Reading, Pa. - - 538 Franklin St.
Forth Worth, Tex. 708 Commerce St.
Sumter, S. C. - - 29 Caldwell St.



## IN 5 MINUTES
## REPAIRS TUBE PUNCTURES

This light and handy outfit mends tube punctures ***anywhere*** in five minutes. Makes repairing a pleasure.

Uses common gasoline, the most convenient and dependable fuel—always available.

Just as easy to use and sure in its results as the larger "Adamson" Vulcanizers—and built on the same proven principles.

Complete with a box of a dozen "Adamson" 5-Minute Repair Gum Patches for $1.00. Extra box of 12 patches ony 25 cents.

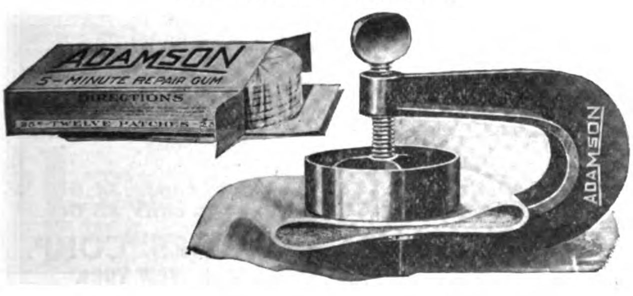
THE NEW
**ADAMSON**
MODEL "E"
**5-MINUTE VULCANIZER**

For general tube and tire repairing the "Adamson" line is complete with various models at from $1.00 to $12.00.

Be sure to buy an "Adamson"—the most practical and largest-used Vulcanizers in the World.

*Sold by all Dealers—Booklet sent on Request.*

**ADAMSON MFG. COMPANY**
EAST PALESTINE, OHIO



# "NORMA"
# BALL BEARINGS

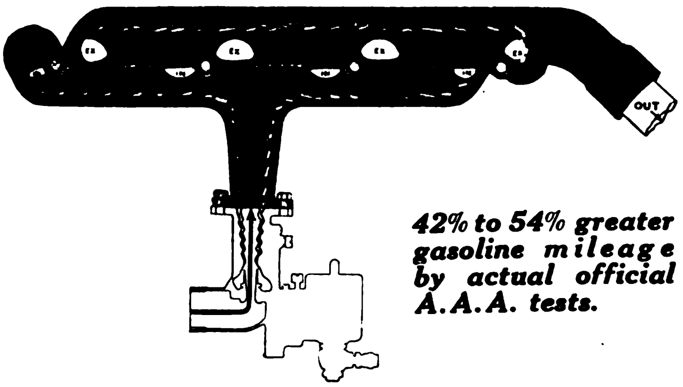
(Patented)

The failure of a magneto bearing will stop a car or a truck as completely as a broken axle. The failure of a bearing in the lighting generator is as serious as a breakdown of the whole electrical system. No bearing in a car or truck is more important than the magneto and generator bearings.

**As to the superlative dependability of "NORMA" Ball Bearings, makers of high-grade magnetos and lighting generators are practically unanimous—expressing their confidence by standardizing their apparatus on "NORMA" Ball Bearings.**

**Be *Sure*—See That Your**
**Electrical Accessories**
**Are "NORMA" Equipped**

**THE NORMA COMPANY OF AMERICA**
1790 BROADWAY NEW YORK
**Ball, Roller, Thrust and Combination Bearings.**



*42% to 54% greater gasoline mileage by actual official A.A.A. tests.*

## *More Gasoline Miles*

THE Wilmo Manifold produces many more miles from every gallon, and practically eliminates carbon. Attached in few minutes with ordinary monkey-wrench. $7.50 (Ford size) and up.

ASK GARAGE MAN OR WRITE DIRECT
GIVING HIS NAME

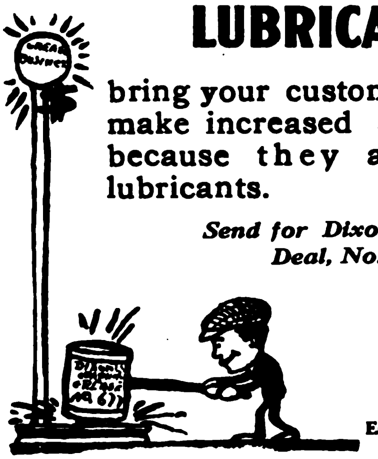
**The Whittier Co.,** 239 First National Bank Building
CHICAGO, ILLINOIS

*Wilmo Manifold*

## MAKE YOUR GREASE FIGURES MOUNT

by selling the one kind of lubricants that serve your customers best.

**DIXON'S**
**GRAPHITE**
**Automobile**
**LUBRICANTS**



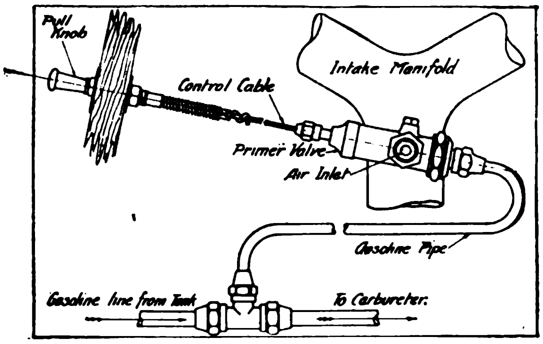
bring your customers back and make increased sales for you because they are the 100% lubricants.

*Send for Dixon's Dealers' Deal, No. 49-G.*

**JOSEPH DIXON CRUCIBLE CO.,**
Jersey City, N. J.
Est. 1827.

## COPLEY PRIMER

*An Auxiliary Carburetor guaranteed to start any motor on one turn in the coldest weather and with any grade of gasoline.*



The Copley when attached becomes permanent equipment and can be installed in less than 30 minutes. Automatically regulated, supplying gasoline and air in the right proportions and at great velocity, thus insuring a never failing highly explosive charge.

Operated by a control on dash or instrument board.

The Copley Primer stops the heavy drains on batteries and it is the greatest time, labor and back saving device that can be placed on any car.

**Jobbers and Dealers.** The Copley is the one practical and dependable primer. Send today for full information, advertising matter and discounts.

**LIST PRICE $5.00**

BAY STATE PUMP COMPANY
*100 Purchase Street* *Boston, Mass,*

DO YOU HEAR
the UTILITY KID signaling you to go ahead and get
UTILITY
VARNISH
RENOVATOR
GO AHEAD

THIS is a NECESSITY not a luxury. Because if you are particular about the appearance of your automobile in WINTER, you'll need "UTILITY". It's no joke to clean your car in cold weather the "old way". You require a multitude of tools—sponge, hose, boots, etc. and you have a cold, unpleasant job. Why not

**Avoid that old-time dirty mess—**
**You can clean your car in evening dress**

with cheese cloth and a can of "UTILITY RENOVATOR."

**Remove the water spots from your car.**
**Cover up the blemishes caused by flying ice and sleet.**
**Dissolve and remove mud absolutely, without scratching the varnish.**

DEALERS—Why not be prepared to give your customer that which he will need? Our special offer sent on request.

*LIST PRICES*

| | | | |
|---|---|---|---|
| *4 Ounce bottles* | *25c* | *Quart cans* | *$1.00* |
| *12 Ounce bottles* | *50c* | *Gallon cans* | *$3.00* |

POUGHKEEPSIE UTILITIES CORP.
46 Winnikee Ave. POUGHKEEPSIE, NEW YORK

LISTEN!

*You Dealers* and *Repairmen* Who Are Particular About The Quality Of The Goods You Sell

WHEN you sell a Harvey spring there are never any kicks or "comebacks," because Harvey springs give absolute satisfaction to the car owner. They have no bolt hole at center—no weak spots anywhere—and are guaranteed from end to end against all defects. If a spring proves defective at any point, we will replace it.

We are partners with every Harvey dealer. Not silent partners, either—we're spending thousands of dollars this year to post car owners in every section of the United States on the merits of Harvey springs—urging them to look for a Harvey dealer when in need of replacements.

It will pay you—big—to connect with this live-wire advertising. Let people know you handle Harvey springs if you expect to get your full share of spring replacement business—and profits.

Harvey springs are made for over 600 of the leading makes and models of cars and each spring is an exact duplicate of the spring it is intended to replace—fits with an accuracy that will surprise you. Write us at once for name of your nearest jobber.

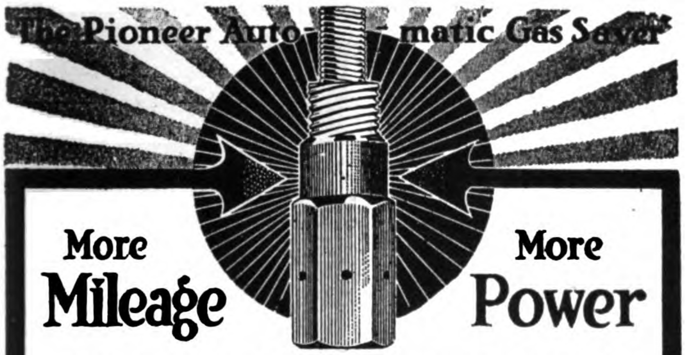
Harvey RACINE

SPRINGS DO NOT BREAK

**Send for the New Harvey Auto Spring Catalog No. 4, Just Off the Press.**

7

**HARVEY SPRING COMPANY**
**851 Seventeenth Street, RACINE, WISCONSIN**



More Mileage

More Power

AEROFRAM

Gas Saver

**The Simplest and Most Efficient of All Gas-Saving Devices—Effects a Notable Improvement in Engine Performance—Anybody Can Install It in Ten Minutes—For All Cars.**

***Absolutely Automatic—Nothing to Adjust***

**Dealers:** The Aerofram actually does the work that more expensive gas-savers claim to do. When you offer it to your customer you do so with the certainty that he cannot duplicate its efficiency with any other device at ten times the price. It will positively add two to six miles per gallon—in many cases more. Hundreds of users have testified to this. Write for details. Liberal selling terms.

***Price in Canada $1.50***

$1 **The Aerofram Co.** $1
**107 Massachusetts Avenue. Boston, Mass.**

FOR FORD OR CHEVROLET

**List Price, 75 Cents Each**

**An Ideal Equipment For Cars Without Door Pockets**

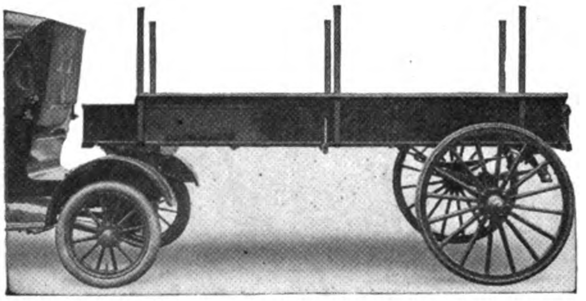
that can be quickly installed and affords extreme convenience. Made of highest grade leather cloth, that will not crack or peel and has longer endurance than leather.

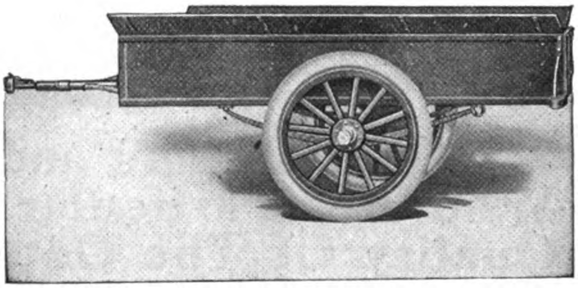
A fast selling profitable accessory. When ordering always state whether for Ford or Chevrolet.

Martin leather cloth specialties, the finest line made, includes Tire Covers, Radiator Robes, Tube Cases, Engine Robes, Robe Rail Bags, Water Buckets, Headlight Dimmers, Etc. Not equalled for quality, and sold for moderate prices.

***Write for Jobbers' and Dealers' Catalogue and Quotations***

**Martin Manufacturing Co.**
**LANCASTER OHIO**





# Haul a 3000-lb. Load With Your Ford Car

A Ford runabout equipped with a Rocking Fifth Wheel, will have light truck capacity when used with **STOCKBRIDGE** 2000 or 3000 pound semi-trailers, and by uncoupling the body, which can be done in a very few minutes, the machine has all the utility of the pleasure car.

**STOCKBRIDGE Semi-Trailers** are the most practical equipment built. They are designed for truck service. They are operated with Ford economy. They can be coupled or uncoupled by any driver without help. The Rocking Fifth Wheel is easily removed. No time is lost. Simply remove six bolts. The owner has a car or a unit with truck capacity and makes no sacrifice of the qualities of either type of vehicle.

The car and semi-trailer can make 20 miles an hour on good roads and can climb any travelled grade.

**STOCKBRIDGE Semi-Trailers** are constructed for truck service. The bodies are express type, with flareboards or flareboards and stakes. The brief specifications are:

| | 2000 Pounds | 3000 Pounds |
|---|---|---|
| AXLE | 1 5-8 in. square, Timken roller bearings. | |
| SPRINGS | Platform type, 1 3-4 in. wide | Platform type, 2 in. wide |
| WHEELS | 46 in. outside diameter, artillery type hubs, 1 5-8 in. spokes | |
| TIRES | Solid rubber, 1 3-4 in. flat top. side wire | 2 in. flat top. side wire |
| EQUIPMENT | Complete Rocking Fifth Wheel ready for attaching | |
| PRICES | $195, f. o. b. Springfield, Mass. | $225 f. o. b. Springfield, Mass. |

**SPRINGFIELD TRAILER,** 800 pounds capacity, express body, semi-elliptic springs, 1 1-4 in. axle, ball bearings, 12-spoke automobile wheels, 30x3 in. pneumatic tires, price **$105,** f. o. b. Springfield.

**STOCKBRIDGE BODY COMPANY,** 130-6 UNION STREET
SPRINGFIELD, MASSACHUSETTS

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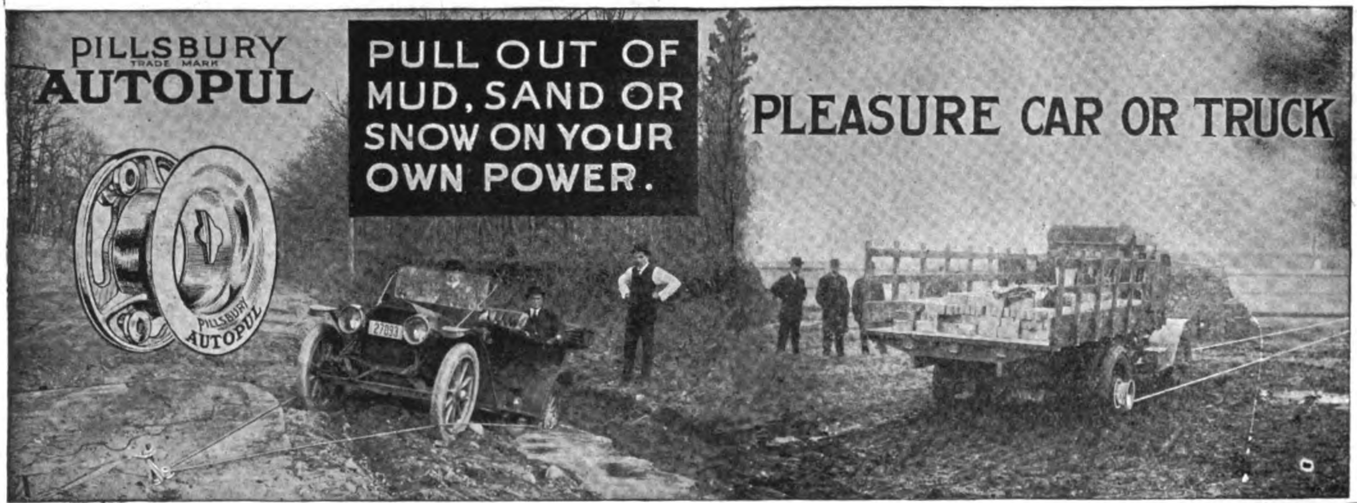


## All Highways are Passable—With a PILLSBURY AUTOPUL

An equipment, either permanent or quickly fitted to any car or truck, with which a ditched or bogged or tractionless vehicle can be drawn to a solid surface.
The outfit can be carried constantly, requires but small space and is very light. Machines can be drawn forward or back as is necessary by their own power.

*LIST PRICE, COMPLETE FITTINGS*

Automobile Size, Japanned............................$8
Automobile Size, Nickeled............................$13
Truck Size, Japanned............................$8 to $35

Indispensable for any truck, an ideal touring equipment, PILLSBURY AUTOPUL is a practical utility and an economy.
It consists of two winding drums, two special cable hooks and locking bolts and nuts. Stakes and cable furnished as extras, the cable or rope in lengths to meet any requirement.

**PILLSBURY HUBPUL** For Ford and model 490 Chevrolet cars—a combination Hup-Cap, Wheel Puller and Auto Capstan, consisting of two hub drums, two spoke hooks and wheel puller cap screw.
Complete Set, Japanned............................$4
Complete Set, Nickeled............................$6

*All quotations f. o. b. Minneapolis, Minn.*

*DEALERS AND JOBBERS: We have a big sales proposition for you. Write for it today.*

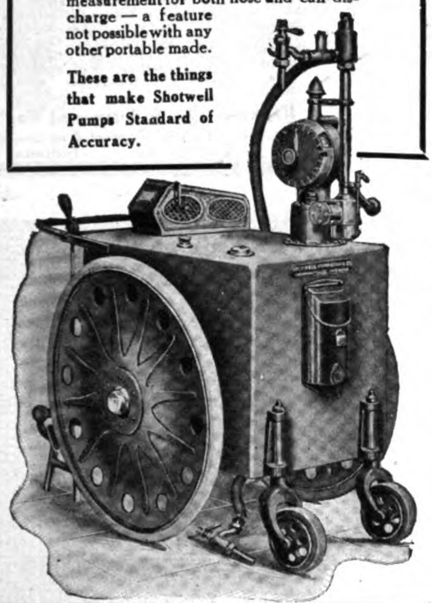
PILLSBURY MANUFACTURING COMPANY, Minneapolis, Minn.

*Did you ever wonder how many of those machines that pass your place would stop if you had a*

**SHOTWELL**
**Anti-Syphoning**
**Portable Filling Station**

Here's the outfit that has a patented anti-syphoning hose draining valve which guarantees against syphoning by the manipulation of the hose and assures accurate measurement for both hose and can discharge — a feature not possible with any other portable made.

**These are the things that make Shotwell Pumps Standard of Accuracy.**



# Shotwell

NEVER MORE NEVER LESS
STANDARD OF ACCURACY

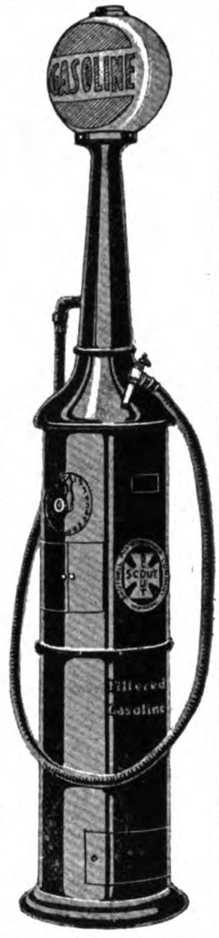
## CURB PUMP

WITH a continuous forward stroke, it accurately delivers clean, filtered gasoline in half the time required by return stroke pumps.

Shorter stops for your customer; more sales and larger profits for you; satisfaction for both.

A full line of measuring pumps, gasoline and oil storage systems for public and private garages, stores and factories. Write for descriptive circular.

**Shotwell Pump and Tank Company**
27 North Alabama Street
INDIANAPOLIS, - INDIANA


GASOLINE
SCOUT
Filtered Gasoline

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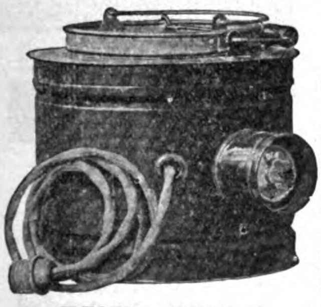


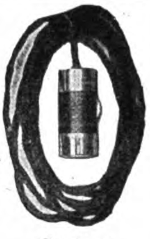
ELECTRIC GLUE POT

Mabey's Dry Heat Electric

## Glue Pot

No flame; no soot or smoke. All danger of fire is eliminated

| Capacity | Price without cover |
|---|---|
| 1 qt. | $ 9.50 |
| 2 qts. | 11.00 |
| 3 qts. | 12.75 |
| 4 qts. | 15.75 |



**Century**
Automobile Cigar Lighter, Complete $1.00 Each, F. O. B. Indianapolis.

*DEALERS—Write For Prices.*

**MABEY'S ELECTRIC & MFG. CO.**
968 Ft. Wayne Avenue INDIANAPOLIS, IND.

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ONE GALLON
BLUE RIBBON
TRADE MARK
REGISTERED U.S. PAT. OFFICE
GREASELESS CREAM
AUTOMOBILE
BODY GLOSS
DIRECTIONS
INDIANAPOLIS, IND.

## Keeps the Body of Your Car *Shining* Like a Mirror

No Grease to Catch Dust—Does Not Coat the Finish—Best Furniture Polish Made—Use With SPRAY if Desired.

**International Metal Polish Co.**

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PAUL G. NIEHOFF & CO.
METALLURGICAL LABORATORIES
NORTH CLARK STREET AT KINZIE CHICAGO ILLINOIS

## Have you received your copy?

It is a *Book of Knowledge* that enables you to become an electrical expert in your automobile work. No more guessing at what you need. It is a complete illustrated catalog of contacts, starter and generator brushes. ***Free*** to every repair man. This is a line that will build up a splendid business. Ask about our Cash Register of contact parts proposition. Write today.

PAUL G. NIEHOFF & CO., Inc.
Metallurgical Laboratories Clark St., at Kinzie, CHICAGO, ILL.

The
AUTOMOBILE
JOURNAL

Is the oldest Automobile magazine published in America devoted wholly to the owners of pleasure cars.

*A quality magazine with prestige and circulation that brings results to advertisers.*

TIMES BUILDING
PAWTUCKET, R. I.

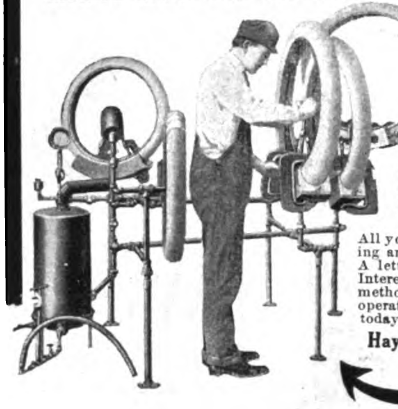
GIVE HAYWOOD SERVICE

**Repair and Retread Auto Tires**

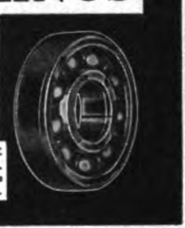
Here's a standardized method of Tire Repairing—a method nationally advertised and known to motorists. Big money can be made either as side line to your present business or as a business by itself. Equip your garage or store with a **Haywood Plant.** Let it earn extra profits or open a Haywood shop in your locality. **It's a rich opportunity.**

**Write for Attractive Offer.**
All you need is one machine, a little training and you are ready to make money. A letter or post card brings all details. Interesting catalog explains new scientific method and gives particulars of our Co-operative Business Building plans. Write today.

**Haywood Tire & Equipment Co.**
955 N. Capitol Ave.
Indinapolis Indiana



NEW DEPARTURE
BALL BEARINGS
American Made
FOR
American Trade
QUALITY
FIRST
THE NEW DEPARTURE
MANUFACTURING CO.
CONRAD PATENTS LICENSEE
BRISTOL, CONN., U. S. A.



*Dealers' Price* **40c**

Be prepared to repair any size tire pumps, grease and oil guns, pressure systems, etc.

*STEVENS*
**CUP LEATHER ASSORTMENT**
Contains 72 best quality, carefully formed Cup Leathers, sizes ¾" to 1½"
Order through a Jobber
*We also supply standard and special leather washers in any quantity, and complete repair sets for all standard pumps.*
STEVENS & CO., 375 Broadway NEW YORK CITY

Assorted Cup Leathers
3-4 inch to 1-2 inch
STEVENS
NEW YORK

B-W DIRECT CURRENT

STURDILY CONSTRUCTED to retain accuracy under the most severe conditions. Handsome in appearance. Made in both flush and surface types. Finished in bright nickel or black rubberoid as desired.

**Better Ammeters Cannot Be Purchased, PRICE.......$1.90**

*Send For Literature*

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2867 Gravois Ave., ST. LOUIS, MO.

AMMETERS

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DISCHARGE
CHARGE
AMPERES
B-W MFG. CO.
ST. LOUIS, MO.

Your Insurance Policy

For the Transmission

SILCO
AUTOMOBILE LUBRICANTS

For the Differential

*THE ECONOMIC LUBRICANT*

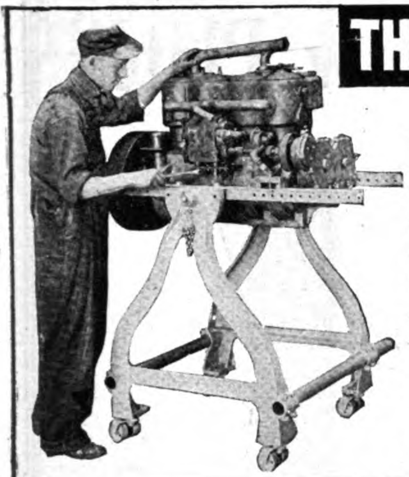
It forms a positive and lasting cushion between all contact points.
It does not leak or solidify. It will silence old or worn gears.
It has three times the lubricating qualities of ordinary grease.
Four grades—light, medium, heavy, a Ford special.
*At all dealers or direct.*

INTERNATIONAL LUBRICANTS CO.
161 Devonshire Street BOSTON, MASS.

*The Automobile Journal*

A quality Magazine with prestige and circulation that brings results to advertisers.

TIMES BUILDING
PAWTUCKET, R.I.



# THE CONTINENTAL MOTOR STAND

WOULDN'T it be convenient if an automobile engine had every nut and bolt on a head where it could be reached instantly? There is no such engine, but the Continental Motor Stand does the next best thing. When an engine is mounted on it every part is accessible. It is the one piece of equipment that you need. It is indispensable—there are ten reasons why. Read them. Many of the leading manufacturers have equipped their assembly and service departments with Continental Motor Stands. It is going to pay you equally as well as it has paid them. Write today for prices and for booklet telling of the many uses of this adaptable repair stand.

**CONTINENTAL AUTO PARTS CO.,** KNIGHTSTOWN. INDIANA.

*Ten Reasons Why You Should Have It:*

1. Saves work and satisfies the workmen.
2. Saves time and satisfies the customers.
3. Simplifies imdividual or progressive assembling.
4. Renders every part of the engine accessible.
5. Fits any make of engine, any size.
6. Adjustable to any position.
7. Easily moved from place to place.
8. Requires but little floor space.
9. No projecting parts to interfere with work.
10. Every stand equipped to handle Ford engines.

---

## *Electrical Repairs Bring the Big Profits*

**If you can repair and adjust Electrical Starting and Lighting Equipment, you will get the cream of the garage business. With the increasing demand for this sort of service, you must equip to handle the business or lose it.**

**Weston**

**Model 280**

### GARAGE TESTING INSTRUMENT

Is the best, the most reliable, and therefore, the cheapest electrical equipment for you. It enables you to determine promptly and accurately the condition of the electrical equipment of any automobile, just where the trouble is, and just how to remedy it. Write for our **Special Proposition.**

**WESTON ELECTRICAL INSTRUMENT CO., 103 Weston Ave., Newark, N. J.**

*23 Branch Offices in the Larger Cities*

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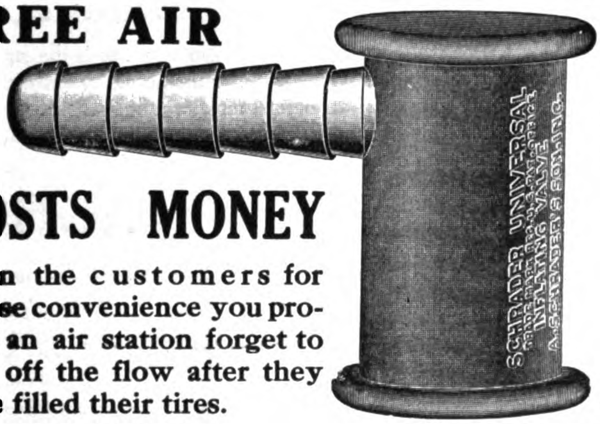
# FREE AIR

# COSTS MONEY

**when** the customers for **whose** convenience you provide **an** air station forget to **turn** off the flow after they **have** filled their tires.



**Guard against this waste by attaching a**

## Schrader Automatic Inflating Valve

**to your air hose.**

**Thanks to this appliance your bottled air locks itself into the tank the minute it is taken off the tire-valve. You turn on the air by pressing the nozzle of the inflating valve against the tire-valve and you turn it off by removing the device from the tire-valve.**

**Made to fit any diameter of hose from 1-4 in. to 5-8 in.**

**PRICE $1.25**
**in U. S. A.**

***Manufactured by***

**A. SCHRADER'S SON, Inc.**
**800 Atlantic Avenue, Brooklyn, N. Y.**

***Schrader products were awarded a Grand Prize and two Gold Medals at the Panama Pacific International Exposition. "There's a reason."***

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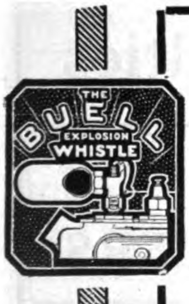

NO COST TO OPERATE

## ATTRACTS ATTENTION

**Whenever Blown, Wherever Shown**

The Buell Explosion Whistle is the first whistle to be adopted as standard equipment on any automobile. It has passed the rigid requirements of the Engineering Departments and is giving exceptional service under the most trying conditions.

The Buell is very simple and its installation is easy, it only being necessary to screw it in place of a priming cup. The 250 pound explosion pressure blows it powerfully, surely and without chance of carbon collecting and causing failure when most needed. It responds to the slightest touch and is exceptionally effective as a warning, owing to its pulsating blowing.

*Ask your dealer to show you one or write for circular describing this interesting device.*

BUELL CO.
1610 So. Michigan Ave. CHICAGO

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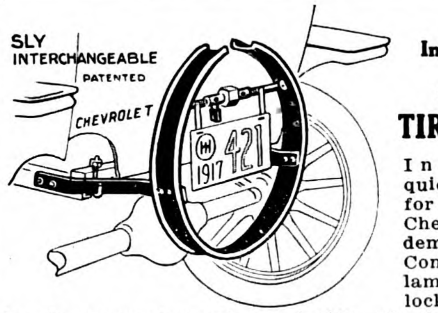


**SLY**
**Interchangeable and Cradle Type**

## TIRE HOLDERS

Interchangeables quickly adjustable for all Ford and Chevrolet tires and demountable rims. Combines place for lamp, number plate, lock and tire, holding by expansion grip on inside of tire. No chafing. Clamps to Ford or Chevrolet frame without drilling or bolting. At all jobbers, or write

**New Era Spring & Specialty Co.**
**865-A Woodward Ave. Detroit, Mich.**

# Little Giant Combination Screw Plates

**Both United States and S. A. E. Standards**

NO. 311
LITTLE GIANT

These assortments are particularly valuable in the automobile repair shop where a considerable amount of threading is done. Each die is contained in its own collet and is adjusted to size. There is also a Bit Brace Die Holder for cleaning up battered threads in hard-to-get-at-places.

Every need of the manufacturer, the garage and repair man, or the car owner who makes his own repairs, for tap and die assortments can be supplied from our big line.

Send to-day for the circulars "Tools for the Automobile" "First aid in the up-keep of the Automobile."

**Greenfield Tap and Die Corporation, Greenfield, Mass.**

New York Chicago Philadelphia Galt, Ontario

## *DO TIRE REPAIRING-*

as a separate business department of your Garage. Business easy to get, grows steadily, and pays well; only small capital required and opportunity everywhere. For best work and surest profits use

## Akron-Williams

**TIRE REPAIR EQUIPMENT**

***Used and recommended by 60 Leading Tire Companies***

***Send for booklet No. 12 and catalogue on complete outfits for every size garage.***

**THE WILLIAMS FOUNDRY & MACHINE CO.**
**Ash Street, Akron, Ohio**

## Over 80 Parts Eliminated

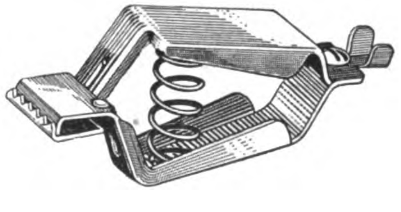
SIMPLICITY in the mechanism of a car is the sign of greater achievement in automobile construction. Twenty-five years of experience has taught the Apperson Brothers how to construct the simplest, the most efficient multiple-cylinder car that is built—the

## APPERSON EIGHT

Ask your dealer to explain and demonstrate. Eights and Sixes, Touring Cars and "Chummy" Roadsters.

**APPERSON BROS. AUTOMOBILE CO.**
**KOKOMO INDIANA**

**Hook Up Your Batteries With Universal Battery Charging Clips**



They enable you to charge lighting and starting batteries without disconnecting them from the car.

**Made of steel—lead plated—may be used over and over again.**

**No. 21-A—1½" spread of jaws.**

**Sample mailed postpaid for 15c in stamps.**

**Single Lots, Each 20c Lots of 10, Each 15c Lots of 100, Each 12 1-2c**

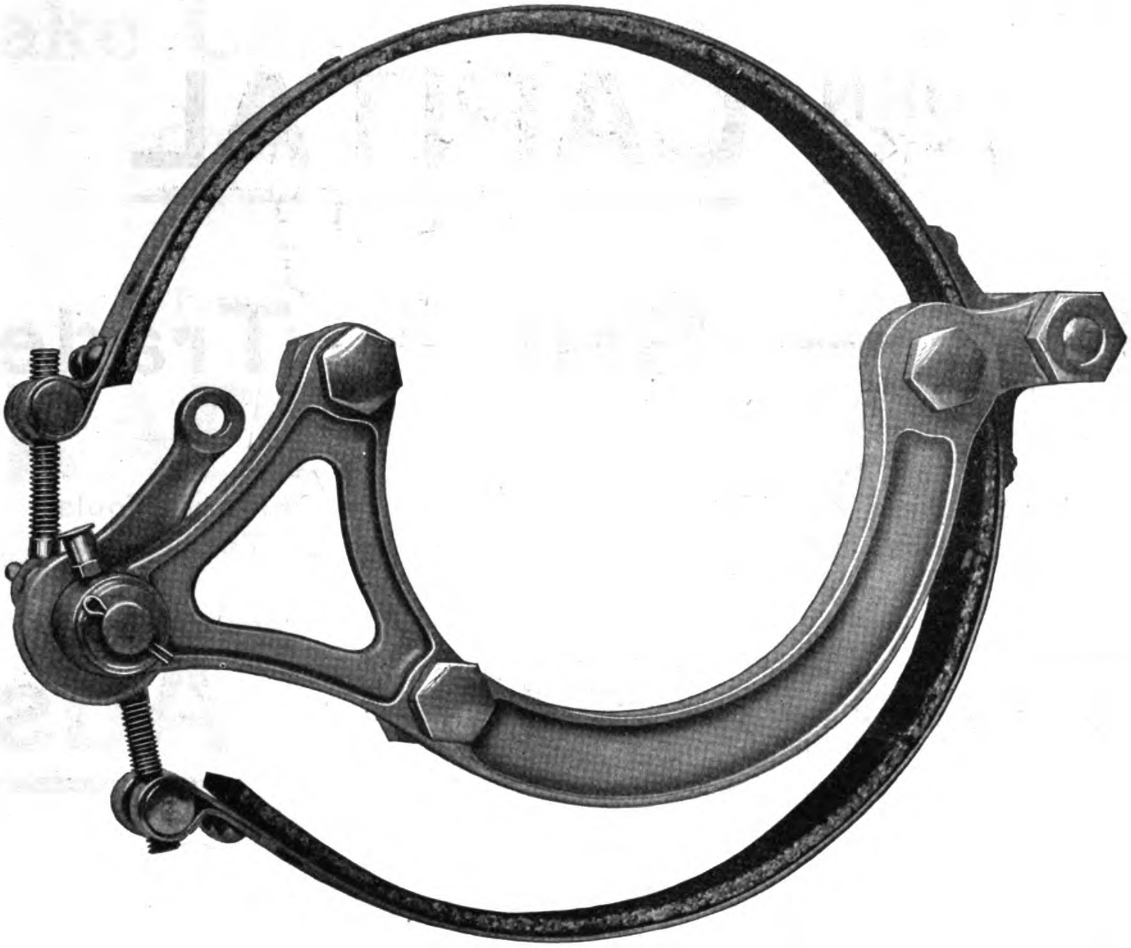
**R. S. MUELLER & CO., 431 High Ave., S. E., Cleveland, Ohio.**

## MOSCO Specialties

## TIMERS . .
## WHEEL PULLERS

**MOTOR SPECIALTIES COMPANY**
**Waltham Manufacturers Mass.**

# THE BRAKE THAT IS **THERE** WHEN NEEDED



HOLDFORD BRAKES
SAFETY FIRST

## The Perfect, Practical, Positive Brake For Ford Cars

**NOT ONLY MAKES YOU FEEL SAFE, BUT ASSURES YOUR SAFETY**

**HOLDFORD BRAKES** are high-grade external contracting brakes for Ford cars, which can be easily and quickly installed to act from the hand lever as emergency brakes, or from the foot pedal as service brakes. Designed in accordance with the best engineering practice; the band and brace are of steel, the toggle crank and bracket are drop forgings and the lining J-M non-burn. Do not drag when released, no readjustment for wear is necessary and oiling is easy.

The brake usually supplied with this car cannot be depended upon in that "tight corner" or "on the hill." The hand brake wears out quickly and allows the car to creep when being cranked. The constant use of the foot brake quickly wears out the transmission. As the foot brake operates from the drive shaft any accident to the axle or the stripping of gears might mean a serious accident.

**HOLDFORD BRAKES** save wear and tear and will be attached by the wise owner on his pleasure car, delivery car or truck. They will positively stop a Ford with locked wheels on *any grade, at any speed, with any load.* Not necessary to remove old brakes. (When ordering state whether hand or foot brakes are wanted).

**THE G. H. DYER COMPANY - - - Cambridge, Mass.**

# TURN YOUR CAPITAL

## Buy — Sell — Trade

**Used Cars, Parts, Fittings, Equipment, Machinery, Tools, Accessories, Supplies, or Whatever Has Value Through the**

# Trade Outlet Ads

### TELL OF YOUR BARGAINS TO

**75,500 Buyers**

***25,000***

Garages, Service Stations, Repair Shops, Machine Shops, Accessory Dealers and Traders in the Accessory and Garage Journal

***6,000***

Truck Owners and Users in Motor Truck

***1,500***

Truck Dealers and Service Station Men in Motor Truck

***35,000***

Owners of Pleasure Cars in the Automobile Journal

***8,000***

Pleasure Car Dealers, Service Stations, Garages, Repair Shops, etc., in the Automobile Journal

All these are known Buyers, Sellers and Traders.

**75,500 Buyers**

**The cost of this service, the most complete and practical available to the industry and trade, is within the reach of every business interest. Business possibilities are unlimited.**

**Rates at request.** **ACCESSORY AND GARAGE JOURNAL, Times Bldg., Pawtucket, R. I.**

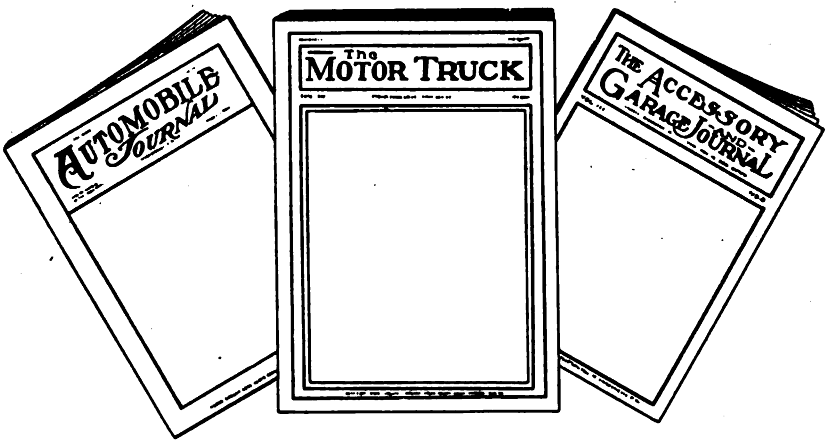
# Make Capital 100% Productive

## CASH CAN WORK QUICKLY
## PROFIT EACH TURNOVER

Turn Inactive Values Into Money Through

# TRADE OUTLET ADS.

***Published In All Issues of These Magazines***



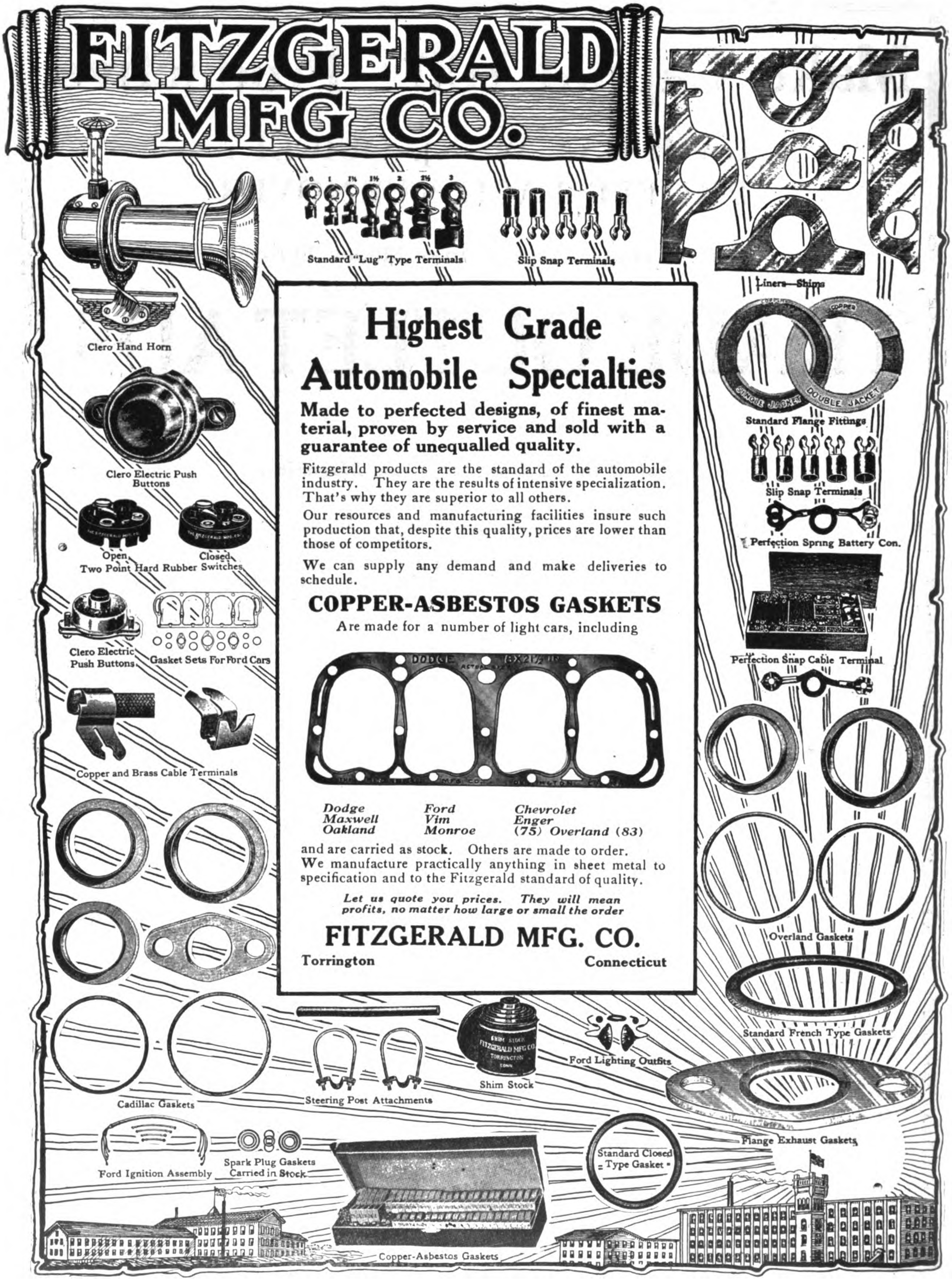
The TRADE OUTLET is the channel through which to reach buyers direct. It is the market place of the industry and trade, where buyers and sellers can find the opportunities for transactions that keep capital active and productive.

To sell 10 new cars eight machines are taken in trade. This means 18 sales to make the profit on 10. To keep capital productive the used cars must be sold. The turnover counts big, doesn't it?

Buyers of used cars are the logical big buyers of accessories, parts, equipment and supplies, for new cars are fully equipped. They ransack the market and are ready to buy. They are the largest and most productive class of motorists. Develop a used car and parts business. The profits are worth your while.

In the TRADE OUTLET there's an opportunity to buy for every opportunity to sell. This means equally good bargains when you want garage and shop equipment, machinery, tools and supplies.

***These magazines reach men you need in your business,—executives, salesmen or mechanics. You can reach them at will when you want them.***


FITZGERALD
MFG CO.
Clero Hand Horn
Standard "Lug" Type Terminals
0
1
1¼
1½
2
2½
3
Slip Snap Terminals
Liners—Shims
Clero Electric Push Buttons
Standard Flange Fittings
COPPER
COPPER
SINGLE JACKET
DOUBLE JACKET
Slip Snap Terminals
Perfection Spring Battery Con.
Open
Closed
Two Point Hard Rubber Switches
Clero Electric Push Buttons
Gasket Sets For Ford Cars
Perfection Snap Cable Terminal
Copper and Brass Cable Terminals
Overland Gaskets
Standard French Type Gaskets
Cadillac Gaskets
Steering Post Attachments
SHIM STOCK
FITZGERALD MFG. CO.
TORRINGTON
CONN.
Shim Stock
Ford Lighting Outfits
Flange Exhaust Gaskets
Ford Ignition Assembly
Spark Plug Gaskets Carried in Stock
Standard Closed Type Gasket
Copper-Asbestos Gaskets
DODGE

# Highest Grade Automobile Specialties

**Made to perfected designs, of finest material, proven by service and sold with a guarantee of unequalled quality.**

Fitzgerald products are the standard of the automobile industry. They are the results of intensive specialization. That's why they are superior to all others.

Our resources and manufacturing facilities insure such production that, despite this quality, prices are lower than those of competitors.

We can supply any demand and make deliveries to schedule.

## COPPER-ASBESTOS GASKETS

Are made for a number of light cars, including

*Dodge* *Ford* *Chevrolet*
*Maxwell* *Vim* *Enger*
*Oakland* *Monroe* *(75) Overland (83)*

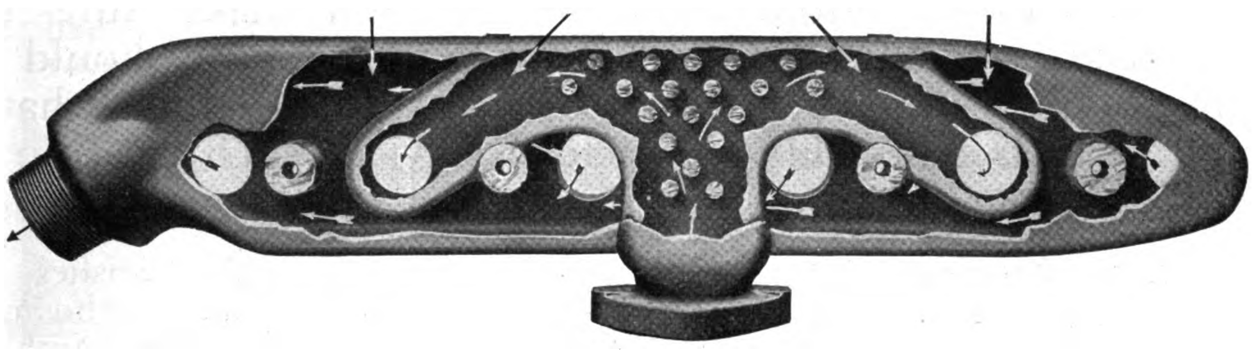
and are carried as stock. Others are made to order.
We manufacture practically anything in sheet metal to specification and to the Fitzgerald standard of quality.

***Let us quote you prices. They will mean profits, no matter how large or small the order***

**FITZGERALD MFG. CO.**
Torrington Connecticut

# HOT PIN MANIFOLD

## for FORDS



**Exhaust and Pins Assure Uniform Heat Treatment of All Fuel**

**This Hot-Pin Chamber Breaks Up All the Fuel—NO WASTE**

**Exhaust Gases Heat the Pin Chamber on All Sides**

### Pre-Heats Every Motor Charge—Vaporizes Perfectly—Increases Mileage Up to

### 50%

### Shortly Pays for Itself in Fuel Saving Alone Price

### $15

INCLUDING "SURE-SHOT" PRIMER

**Every** dealer should stock this big winter seller NOW. **Every** Ford owner—and there are over 1,500,000 of them—**needs** and can be sold a Hot Pin Manifold.

**You** can guarantee every purchaser an increase in gasoline **mileage** from 40% to 50%—you can guarantee more power, **quicker** acceleration, easier starting and a better all round **running** car. And all this for only $15! No unprejudiced **car** owner can refuse to purchase equipment that WILL **PAY FOR** ITSELF.

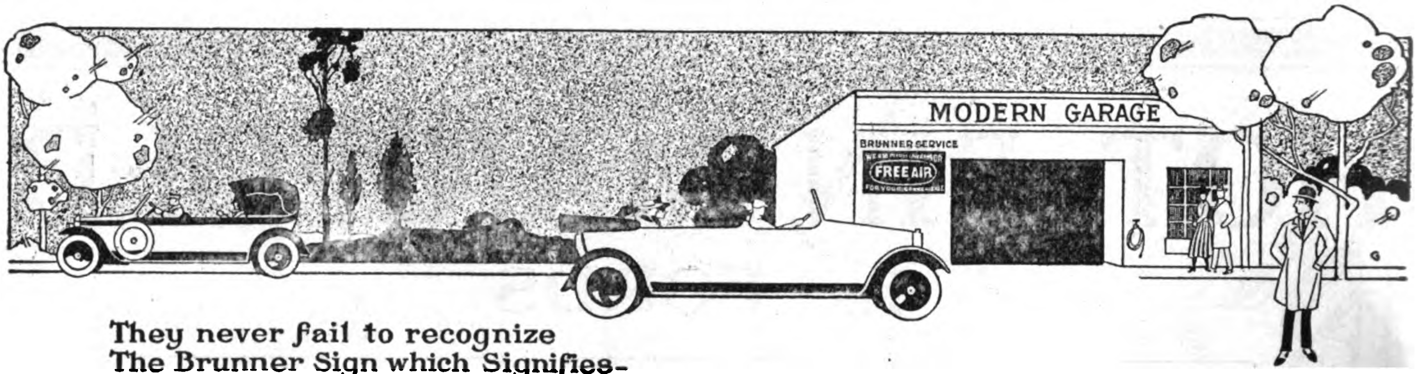
**Live** dealers should be able to dispose of hundreds of these **manifolds** in the next three months.

**Indispensable** 12 months in the year. Due to the low grade **gasoline**, which is now the only kind obtainable, the Hot Pin Manifold is doubly necessary and desirable in WINTER. Hard winter starting is completely eliminated. A "sure-shot" primer (furnished with manifold) enables a start with the first turn of the crank.

The first hot blast of exhaust gas pre-heats every motor charge—ensures complete vaporization and a quick, clean-burning mixture as efficient at 10° below zero as in hottest summer weather.

Write to-day for unusually interesting sales proposition. Very liberal discounts, insuring substantial profits. State and local representatives wanted everywhere.
This article is fully guaranteed on a money-back basis by a responsible concern.

## K. B. C. COMPANY, 2015-A Michigan Ave., CHICAGO

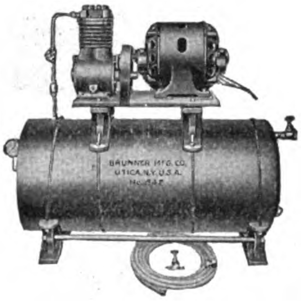


They never fail to recognize
The Brunner Sign which Signifies-
A Service True-which Satisfies-
The Motorists who are Brunner-wise

**YES, BRUNNER SERVICE SATISFIES**

AS the winter months draw near, Mr. Garageman, you should look around you carefully and make sure that every detail of your service is as proficient as it should be. Your compressed air service—for instance—is that what it should be? Is it a truly satisfactory service, such as Brunner service—the one compressed air service that always satisfies.

***Don't wait till spring*** to improve your service—***now is the time*** to install Brunner equipment. It would help you over the hard winter months and make you ready for the spring as well—***now*** is the time—not next spring.



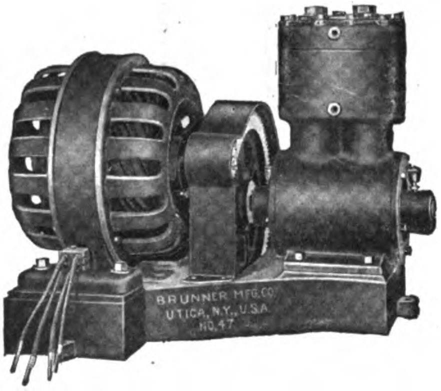
A service that satisfies is a service that those who motor during the winter months appreciate—Brunner service would be appreciated by your regular patrons and would bring to your door the trade of the Brunnerwise Motorist which would help some.

## INVESTIGATE THE BRUNNER AIR COMPRESSOR

**The Brunner Air Compressor is the pioneer Garage Air Compressor — it was designed and developed for the Garageman's use.**

**The Brunner Plant was built and equipped for the exclusive purpose of manufacturing Garage Air Compressors.**

**There are seven standard sizes of Brunner Air Compressors**



**There are any number of combinations possible to suit any possible garage requirements.**

**There are more Brunner Air Compressors in use in the garage than there are compressors of any other make. There must be some good reason.**

**Install a Brunner now—make your service a service that satisfies.**

We will be glad to send you our No. 14 Catalogue and Handbook on Compressed Air and the name of the Brunner jobber covering your town. He will be glad to recommend an outfit suitable for your requirements and guarantee it to be the best that your money can buy.

# BRUNNER MANUFACTURING COMPANY

Main Office and Plant:
UTICA, N. Y.

Cincinnati Branch:
CINCINNATI, OHIO.

# Ford Starts and Brakes Like Big Car

Put a set of Cork Inserts in the Ford transmission and it acts like a different car. That bucking at the start—that lurch into reverse—the shivering and chattering under the brake—which embarass the driver and are hard on the car—all disappear. The Ford goes into low as smooth as you please. A light touch of the toe and braking begins instantly but smoothly. A sudden pressure in the emergency, and the car stops within a few feet, without chattering or rattling.

**$3 per set of 3**

## ADVANCE CORK INSERT

TRADE MARK REG. COPYRIGHTED 1917

## TRANSMISSION LININGS FOR FORDS

stop the slipping through the use of buttons of cork—a patented feature no other lining can have. Cork never gets hard or polished. It's hard, polished linings that cause all the trouble in ordinary transmission linings. Cork Insert Linings don't slip—don't grab. They make the smoothest, safest, most economical linings for the Ford transmission ever devised. They give a better driving, better braking car, and a lining that outwears ordinary linings three to one.

## Ford Motor Kept Cool—Fan Kept Fanning by Fan Belt That Doesn't Slip

When the Ford fan belt runs as it ought, the Ford motor is kept cool and overheating is avoided. But the fan can't fan properly if the belt is slipping and lays down on the job. The slippage of the ordinary Ford belt runs as high as 25% to 50%.

## ADVANCE CORK INSERT

TRADE MARK REG. COPYRIGHTED 1917

## FAN BELT FOR FORDS

stops slipping. The buttons of cork, unaffected by water or oil—grease or dirt—grip at the first turn of the motor and keep the fan fanning. Cork Insert Fan Belts outwear several ordinary fan belts and do the work better as long as they last.

**Advance Automobile Accessories Corp.**
Dept. J 3-1 56 East Randolph Street, Chicago

**Dealers—Order from Your Jobber!**

Order at least a dozen sets of Cork Inserts next time your jobber's salesman drops in. Cork Inserts mean better profits for you—better service and satisfaction for the user. They are the livest line in the field. Strongly advertised. Your customers know about them. Stock them and they'll move fast. Send coupon if your jobber can't supply you.

**Dealer's Coupon** Check and Mail Today

**Advance Automobile Accessories Corp.**
Dept. J 3-1 56 East Randolph St., Chicago

☐ Send one dozen sets of Advance Cork Insert Transmission Linings for Fords.
☐ Send one dozen Advance Cork Insert Fan Belts, 1917 Ford.
☐ Send one dozen Advance Cork Insert Fan Belts, 1916 or earlier model Ford.

(Regular dealer discounts to apply.)

Name..................................................................

City..................................................State..........

Jobber's Name.........................................................

# Attention! You Who Own a

## Ford-Maxwell Overland-Studebaker

FOLLOW the example of thousands of owners of these cars and equip with AC Spark Plugs. There's no other way to appreciate your car to the full! There's no other way to make *any* car render its maximum capacity. Note the list of leading machines equipped with AC. Their builders refuse to risk uncertain service and they install AC for the honor of the car. Do the same for yours—today. The extra cost is trifling, the values *big*. Look for the name, stamped in the porcelain—

Special for Ford Cars—AC Cico

½-inch Regular for Willys-Overland—AC Titan

## AC Spark Plugs

*The Standard Spark Plug of America*

⅞-inch Regular for Maxwell—AC Titan

½-inch Regular for Studebaker—AC Titan

**CHAMPION IGNITION COMPANY**
**Sole Manufacturers, Flint, Michigan**

## These Cars Are AC Equipped

Cadillac
Pierce-Arrow
Packard
Marmon
Hudson
Chalmers
Hupmobile
Chandler
Haynes
Chevrolet
Dort
Cole
Reo
Paige
Peerless
Pilot
Buick
Oakland
Oldsmobile
Nash
Kissel Kar
Premier
Knox
Abbott
Pathfinder
White
Delco-Light
Murray
Bour-Davis
Economy
Jordan
Liberty
McFarlan
Paterson
Detroiter
Davis
Lexington-Howard
Scripps-Booth
Crane-Simplex
Stearns-Knight
Saxon
Stutz
National
Velie
Jackson
Apperson
Anderson
Phianna
Locomobile
Disbrow
Daniels
Westcott
Monroe
Singer
Stephens
Dodge Bros.
McLaughlin (Canada)
Dorris
Duesenberg
Hatfield
American-La France
Henderson Bros.
Old Reliable Trucks
Gabriel Trucks
Gramm-Bernstein Trucks
Moreland Trucks
Wilcox Trux
Sterling Trucks
Republic Trucks
Diamond T Trucks
Four Wheel Drive
Federal Trucks
G. M. C. Trucks
Netco Trucks
Sandow Trucks
Signal Trucks
Brockway Trucks
Samson Tractor
Acme Trucks
Maxim Trucks
Menominee Trucks
M. H. C. Trucks
Riker Trucks
Stewart Trucks
Wisconsin Trucks

# Over 11,900 retail merchants failed last year

Bankers and wholesalers are interested in these figures. They lose when the merchant fails.

Up-to-date National Cash Registers stop lax methods in Retail Stores—save time, work and money.

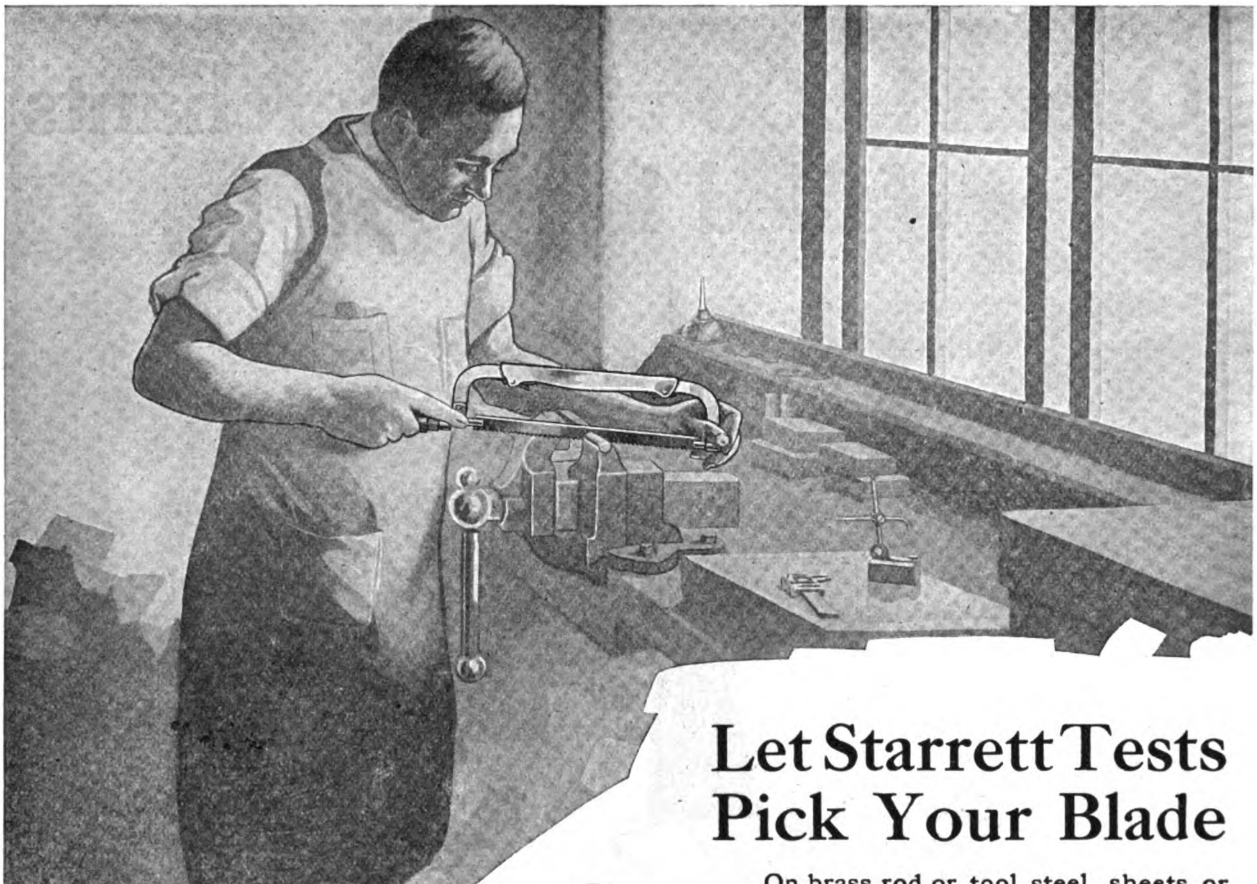
And they enable a merchant without delay to give a complete, reliable statement of his business.

Every banker and wholesaler should investigate the N. C. R. System. He will then recommend it to the merchant.

Our registers are sold on small monthly payments. 5 per cent off for cash.

*Write today for literature* *Address Department 36.*

**THE NATIONAL CASH REGISTER COMPANY, Dayton, Ohio**



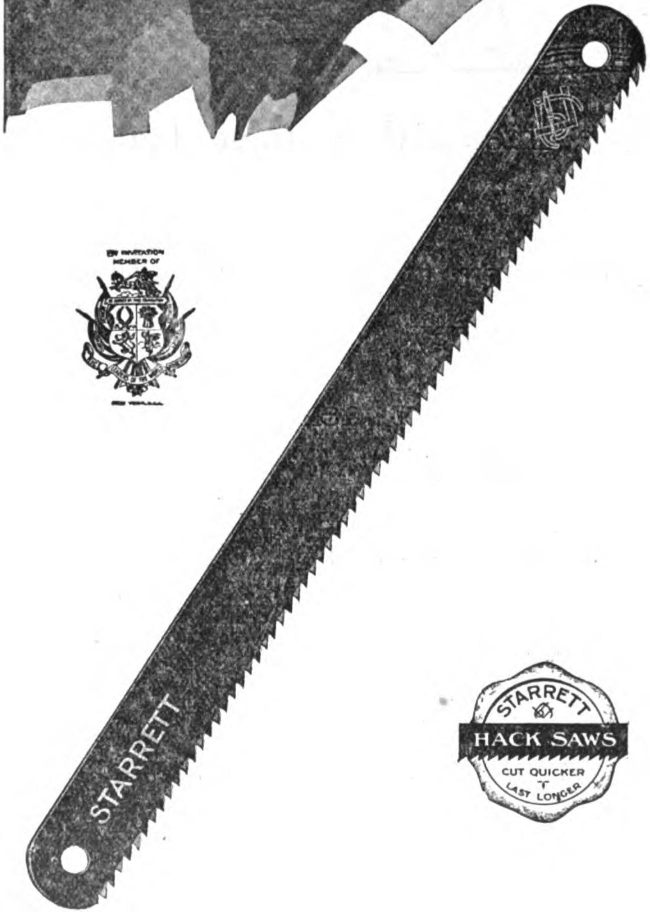
# Let Starrett Tests Pick Your Blade

On brass rod or tool steel, sheets or girders, you can't be sure of the best work unless tests have come first. Tests are important. Tests *prove* that this or that blade is *the* blade to use.

Tests cost time and money. For that reason we have made the tests for you. We have spent much time in perfecting a hack saw blade for each class of work. That's why

## Starrett Hack Saws

of finely tempered tungsten steel, with milled teeth having the proper set, are preferred when good work and fast work are demanded.



STARRETT HACK SAWS CUT QUICKER LAST LONGER

The Starrett catalog, besides listing a full line of hack saws and hand frames gives much valuable information on the best blade for each class of work. Drop us a post card asking for Catalog No. 21GT.

**The L. S. Starrett Co.**

The World's Greatest Toolmakers

ATHOL, MASS.

NEW YORK LONDON HICAGO

42-736

The ACCESSORY and GARAGE JOURNAL

Devoted Exclusively to the Automobile Trade and Allied Interests.

VOL. VII. PAWTUCKET, R. I., OCTOBER, 1917 No. 6

# *U. S. Rubber Sales Make Sweeping Record*

### First Eight and One-Half Months of War Year Surpass Entire Year of 1916.

The United States Rubber Co. reports that up to midnight Sept. 12, during a period of 8½ months, the sales and deliveries to dealers in tires were more than sold to the dealers by the company during the entire year of 1916. The net earnings of the company for the six months from Jan. 1 to June 30, 1917, after deducting all interest charges and an allowance of $500,000 on account of war excess profits tax (subject to adjustment), amounted to $7,239,966.

## RUSSEL MOTOR AXLE INCREASES CAPITAL.

The stockholders of the Russel Motor Axle Co., Detroit, Mich., at a recent meeting voted to increase the capital stock to $750,000, all common stock. There was formerly outstanding $495,000 of common stock and $39,000 preferred. All the preferred has been retired at par.

Stockholders have been offered rights to subscribe to the $155,000 of new stock at par, and by Oct. 31 subscriptions for this new stock will have been paid for in cash.

The company, which specializes in internal gear drive axles for motor trucks, has just completed a one-story addition to its plant, which provides additional floor space of 26.000 square feet for more production.

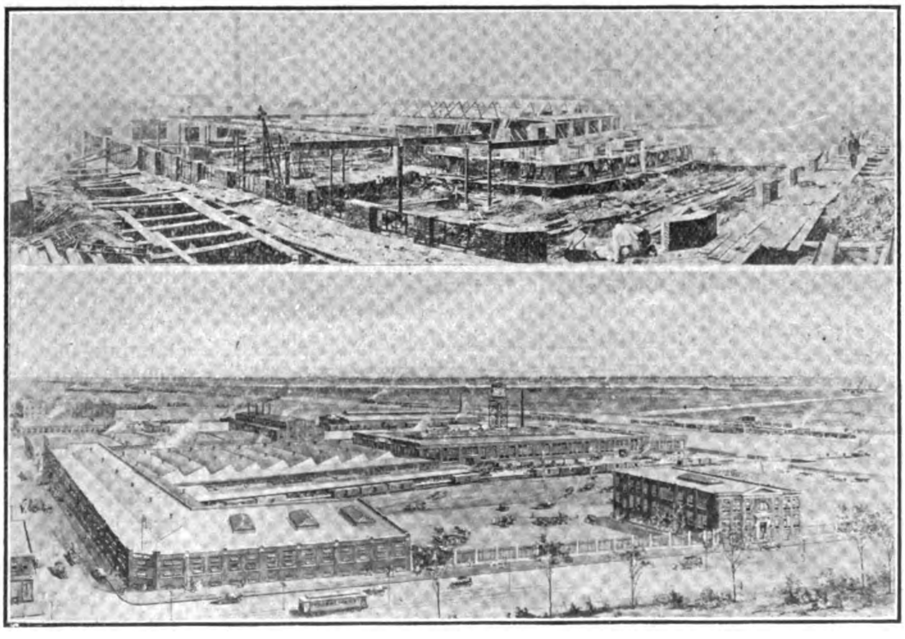
## TRACTOR MAKERS ORGANIZE.

The National Tractor Attachment Association has been formed in Chicago by manufacturers of tractor attachments for passenger cars. The president of the association is J. H. Palmer of the Farm Tractor Co., Fond du Lac, Wis., and V. P. Wilkins of the Unitractor Co. of Chicago is vice president.

## ELGIN PUSHES WORK ON BIG FACTORY ADDITION.

The new Elgin plant in Chicago, one of the big building enterprises of the year in the automobile industry, shows consistent progress. The Elgin corporation was established in Chicago about two years ago and its wonderful forward strides in production and assets is matched by its fast building record.

Factory floor space increased from 8064 square feet to 108,800 square feet in one year. The big factory building, two and one-half blocks long, when completed will give the plant a capacity of 100 cars a day. Plans have been approved for a new two-story office building 72x110 feet, adjacent to the factory, another step toward realization of the full building program.



**Big Buildings of the Elgin Motor Car Corporation, Chicago, Ill., Under Construction; Below, Drawing of Complete Plant.**

# *Minority Wins First Blood in Big Ford Suit*

### Preliminary Decision Over the Disbursement of $60,000,000 for the Plaintiffs.

The first decision in the famous Ford-Dodge litigation over the disbursement of the $60,000,000 accumulated surplus of the Ford Motor Car Co. was handed down by Circuit Judge George S. Hosmer of Detroit, and was in favor of the minority stockholders, who, headed by the Dodge Brothers, sued for a partition of the company's earnings.

In his decision Judge Hosmer ruled that a corporation may not against the protest of a stockholder hold its profits without distribution; that the proposed blast furnaces at River Rouge were not a necessity, but that the Ford Motor Co. is not a monopoly within the lines laid down by the Sherman anti-trust law.

An appeal from the decision will be taken immediately by the Ford Motor company according to Alfred Lucking, chief counsel for Henry Ford, who holds the majority of stock in the Ford Motor company. The Dodge Brothers, automobile manufacturers, are also minority stockholders of the Ford Motor company, of which Henry Ford holds a controlling interest. A prior legal move by the Dodge Brothers was the attempt to obtain an injunction, permanently restraining Ford from starting work on the River Rouge furnaces, which Ford contemplated. It was charged at the trial and denied by Ford that the minority had no voice.

# Fixing of Resale Prices Assailed

### New Federal Trade Commissioner Urges More Salesmanship at Hearing.

Victor Murdock of the Federal Trade Commission stood up for salesmanship in the hearings begun Oct. 3 on the Stephens' Price Maintenance Bill, and adjourned to Oct. 31. The question of fixing of resale price by manufacturers of automobiles and accessories has come up several times in the hearings.

Commissioner Murdock, whose questions seemed to indicate that he does not favor the principle of price maintenance, interrupted a witness representing the Benjamin Electrical Manufacturing Co. of Chicago, as follows:

"I would like to ask you this question before you get through. We have been dealing with various articles, none of them alike—collars, soap, watches and automobiles. All along we have followed a simple formula, following from the producer of the article through the jobber to the retailer. Most of the advocates have contended that the manufacturer should set a price below which the retailer cannot sell. No one, apparently, except one man, has spoken for the retailers.

"There has been a great deal of eloquence expended here as to the selling facilities of national advertising, and no one has spoken a single word with reference to the facility which the retail clerk enjoys as a good salesman. Suppose your proposition is carried in its entirety and price maintenance is permitted and everything that a retailer has in his store—and this is a retailer who carries a variety of articles—and the price of everyting in his store is fixed for him; precisely what is his function in the community?"

Mr. Addington: "He is an agent or distributor of what he has on his shelves."

Commissioner Murdock: "His quality of salesmanship is absolutely eliminated."

Mr. Addington: "No, because he will have many competing articles on his shelves. He is a man who had dealt in all of them; he is well versed in the merits of each of them and very honest in explaining the good points of one and the bad points of the other."

Commissioner Murdock: "But he has no liberty at all as to price."

Mr. Addington: "No; he should have no liberty at all as to price."

### NEW YORK BRANCH OF "THE BEARINGS CO."

The Bearings Co. of Pennsylvania, Inc., has opened a branch office in New York City at 1864 Broadway. A complete stock of bearings is maintained for the accommodation of the company's trade in the metropolitan territory. A sales agency has also been installed at Newark, N. J., at 293 Halsey street, which is conducted under the direction of P. C. Christman, manager of the New York branch.

### COMMONWEALTH FINANCE CORPORATION EXPANDS.

The Commonwealth Finance Corporation of New York City has leased additional space in the 20th floor of the American Surety building, 100 Broadway, to care for the constantly growing volume of its business. The company has also opened an office at 323-4 Bulletin building, Philadelphia, Pa., under the management of L. M. Seiver. It is the largest capitalized financial institution in the country specializing in automobile paper.

# Laurel Motors To Build New Plant

### Will Manufacture Line of Passenger Cars and Trucks With New Motor.

The Laurel Motors Corporation, which has taken over the Laurel Motor Car Co. of Anderson, Ind., will erect a modern plant which will be ready about Jan. 1. The company will manufacture a line of Laurel passenger cars and trucks. The company will use a new 16-valve motor designed by Robert M. Roof of Anderson, who designed the 16-valve motor heads for Ford engines. The Laurel 1918 model will have a wheelbase of 116 inches and will be furnished in all the popular body types. The production schedule for the year calls for 3000 to 5000 cars for the year. It is understood that the passenger car will sell for about $1000, although no definite announcement about the price has been made.

Laurel cars have been produced at Richmond, Ind., but are now being made at temporary quarters in Anderson pending the completion of the new plant.

### TRAP SHOOTING, THE "SPORT ALLURING."

The "Sport Alluring," is the title of a neat and interesting booklet just issued by the Du Pont Company, Wilmington, Del. It deals with the art of trap shooting, and contains over thirty illustrations. To the professional or amateur trapshooters or those that would become interested in the sport it is a practical compendium of the practices and rules of the sport as well as a manual. It will be mailed free to those addressing the Du Pont company.

### SELLING REPUBLIC TRUCKS.

M. A. Middaugh, dealer in hides, vehicles and gasoline engines at Towanda, Pa., has been appointed agent for the sale of Republic motor trucks.

# Car Shortage Due Says Sales Head

### Inevitable War Result Says Ollier—Little Hope from Steel Cut.

"Present conditions were never better for the sale of automobiles," says L. J. Ollier, vice president and director of sales of the Studebaker Corporation. "But I also want to emphasize the fact that the future is full of uncertainty—not because of a diminishing desire upon the part of the public for a car, but due to the increasing cost of materials and the great demands being made by the government for all base metals.

"In my estimation prospective purchasers of an automobile who buy their car at this time are showing a great deal of foresight. Automobiles will probably never again be as low in price as they are right now—surely, not for many years to come. Furthermore, there is every prospect that the great world war will eventually cause a shortage of automobiles. It is certain that the tremendous requirements of our government will so deplete available supplies of materials that practically all makers will be forced to greatly curtail, and, in some instances, cease production.

"The impression that got about when the new rates on steel were fixed by the government that automobile prices would drop at once is hardly justified by the facts. Prices for '1918 models' may be as much as 50 per cent. higher than prevailing prices—and that in the face of the fact that practically all manufacturers have recently been forced to make sharp advances."

### "ALL IS NOT GOLD THAT GLITTERS" IN TIRE FACTORIES.

Warren C. Daniel, head of Warren C. Daniel, Inc., New York; Raymond N. Bond and H. P. Dowst, stock salesmen, were arrested last week in New York on a charge of using the mails to defraud in connection with the flotation of stock of the Alliance Tire and Rubber Co., Alliance, O. The case was brought as a result of investigations of the Associated Advertising Clubs of America. The promoters are alleged to have sent out a prospectus in which two factories were shown as constituting the plant and also stating that the company was keeping factories running 24 hours a day and claiming that they were turning away $500,000 worth of orders.

Investigators who visited the plant claim that they found only one factory building and only one man at work on one tire, while in the basement of the building they found another man repairing a tire.

The Alliance Tire and Rubber Co., which is a Delaware corporation, succeeded the Alliance Rubber Co. The old company was capitalized at $58,000 and the second concern had an authorized capital of $2,500,000.

# FINANCIAL NEWS OF THE MONTH

## United Motors Corp. Earns Surplus of $7,540,816—Maxwell Shows Big Net Earnings—Elgin Assets Grow

THE first annual report of United Motors Corporation has been prepared and is accompanied by a statement from the president, Alfred P. Sloan, Jr. It covers the operations of the corporation for the year ending June 30, 1917, and that of its subsidiaries, which include the following: Hyatt Roller Bearing Co., Remy Electric Co., New Departure Manufacturing Co., Dayton Engineering Laboratories Co., Perlman Rim Corporation, Harrison Radiator Co., Klaxon Co., United Motor Service, Inc., and the Bearings Service Co.

The report, which will soon be sent to stockholders, shows a net surplus available for dividends on the 1,101,640 shares of stock outstanding, of $7,540,816, or the equivalent of $6.85 a share, after charging off $868,465 for depreciation and deducting the normal income tax of two per cent., but not allowing for the excess profits tax.

President Sloan's statement is as follows:

"During the year your directors have authorized very necessary plant extensions by the New Departure Manufacturing Co., as well as the Harrison Radiator Corporation. At the time the corporation was formed extensive improvements were being carried on by the Hyatt Roller Bearing Co. and the Perlman Rim Corporation. The value of plant and equipment as of July 1, 1916, was $10,314,174, and as of July 1, 1917, was $13,252,757, an increase of $2,938,583.

"All extensions authorized are at the present writing practically completed. It is not the present purpose of your directors to authorize any further development work in the near future, as they believe that the plants of the corporation have sufficient capacity to meet all present demands.

"The physical condition of all the properties is most excellent. The great bulk of both buildings and machinery is new. This is due to the rapid growth of the business of the corporation, and, further, to the fact that it has availed itself of the unusual opportunities of disposing of older equipment at very profitable market prices, and same has been replaced when necessary with equipment of the most modern type.

"The net sales of the corporation for the year amounted to $33,638,955. This corresponds with $25,064,184 for the previous year, an increase of $8,574,771, or 38 per cent. No part of the above sales represents war orders or war material of any kind or description. Due to the unusual conditions and uncertainties that confront all business enterprises, any forecast of the current year's operations would be useless. It may be stated, however, that the corporation has renewed all its contracts with its former customers and has obtained valuable aditional contracts. If the material which it has contracted to produce is actually taken by its customers, its sales for the present year should very materially increase. In addition to this the operations of two of its subsidiaries should increase the total volume of sales by approximately $8,000,000. This is due to the fact that the Perlman Rim Corporation was not manufacturing during the past year, and the operations of the Harrison Radiator Corporation were only included to the extent of six months, and its business during that period was very limited.

"The net operating income of the corporation for the year was $7,621,743. This represents 23% on the net sales and is allowed after deducting the 2% cent. normal income tax and charging off as depreciation $868,465. In the above there is no allowance for excess profits tax. In addition to the above allowance for depreciation there has been absorbed as a part of the cost of sales for maintenance of plant and property $1,160,752.

"Conditions more or less beyond the control of your directors have necessitated the absorption of its earnings as working capital. The inventories as of July 1, 1916, were $8,717,300, and as of July 1, 1917, were $14,387,734, an increase of $5,670,434.08, or 65 per cent. This is accounted for partly by the high cost of labor and material, and, further, by the inventories of the aditional properties acquired. Every effort is being made by your directors to keep the inventories at the minimum necessary for the safe operation of the properties. It may be stated that fully 75 per cent. of the corporation's inventories have been purchased against merchandise sold, so that in the event of any unusual or rapid reduction in the cost of materials the loss to this corporation will be relatively small."

The report is for the year ending June 30, 1917, and shows the income account as follows:

| | |
|---|---|
| Gross sales | $34,820,526 |
| Returns, allowances, discounts, etc. | 1,181,570 |
| Net sales | 33,638,955 |
| Cost of production | 24,235,901 |
| Gross profit on production goods sold | 9,403,054 |
| Gross profit on purchased goods sold | 166,913 |
| Royalties earned | 589,963 |
| Gross earnings | 10,159,931 |
| Selling and general expenses | 2,401,542 |
| Net earnings | 7,758,389 |
| Other income | 416,213 |
| Gross income | 8,174,602 |
| Taxes, interest, etc | 552,858 |
| Net operating income | 7,621,743 |
| Amortization of patents, inventories, adjustments, etc | 236,593 |
| Net income | 7,385,150 |
| Subsidiary companies dividends | 80,927 |
| Final surplus | 7,304,222 |

The consolidated general balance sheet of the United Motors and subsidiaries as of June 30, 1917, is as follows:

ASSETS.

| | | |
|---|---|---|
| Plant, property and equipment | | *$13,252,758 |
| Other real estate | | 23,027 |
| Good will, patents | | 21,558,513 |
| Investment — stocks, bonds, etc | | 590,519 |
| Cash | $1,802,423 | |
| Notes receivable | 147,659 | |
| Accounts receivable | 3,896,986 | |
| Sundry debtors, royalties, etc | 484,612 | |
| Surrender value life insurance policies | 25,538 | |
| Accrued interest received | 1,818 | |
| Inventory | 14,387,735 | 20,746,773 |
| Deferred debit items | | 168,019 |
| Total | | $56,339,609 |

LIABILITIES.

| | | |
|---|---|---|
| Sub co preferred stock | | $1,091,300 |
| First mortgage bonds | | 300,000 |
| Real estate purchase contract | | 312,000 |
| Notes payable | $3,223,928 | |
| Accounts payable | 2,620,689 | |
| Patent purchase account | 318,750 | |
| Employees' Liberty bonds | 2,039 | |
| Accrued salaries and wages | 176,225 | |
| Accrued taxes | †244,890 | |
| Accrued interest | 9,913 | |
| Other accrued accounts | 5,713 | 6,602,147 |
| Reserves — Liability, etc. | | 19,905 |
| Sub co common stock —minority interest | | 157,100 |
| United Motor capital stock—no par value | | 40,234,800 |
| Sub co capital surplus —minority interest | | 318,134 |
| Profit and loss surplus | | 7,304,223 |
| Total | | $56,339,609 |

*Value after $2,024,036 reserve for depreciation.

†Includes the normal Federal income tax of two per cent. for the year ended June 30, 1917, no provision is made for the excess profit taxes.

### MAXWELL EARNS $5,507,647 SURPLUS OF $11,018,472.

### Fourth Annual Report Shows 39 Per Cent. Increase of Cars Sold.

The fourth annual report of the Maxwell Motor Co., Inc., for the year ending July 31, 1917, shows net earnings of $5,507,647 after deducting a corporation income tax of two per cent., but without any deduction for an excess profits tax.

The number of cars sold by the company during the year showed an increase of 39 per cent. over the previous year, and sales contracts with distributors have been signed for 32 per cent. more automobiles of all models than had been contracted for at the same period last year.

The consolidated balance sheet of the company at the close of the year is as follows:

## MAXWELL COMPANY STATEMENT.

### ASSETS.

| | | | |
|---|---|---|---|
| Capital Assets: | | | |
| *Real estate, buildings, machinery and equipment | $7,201,878 84 | | |
| Less—Reserve for depreciation | 1,355,140 95 | $5,846,737 89 | |
| *Per appraisal of American Appraisal Co., July 31, 1917. | | | |
| Investments in other properties | | 1,259,867 45 | $7,106,605 34 |
| Good will, patents, models, trade marks and trade names | | $26,190,469 54 | |
| Less—Amount of surplus appropriated for retirement of first preferred capital stock | $179,805 61 | | |
| Less—Real estate, buildings, machinery and equipment, etc., appreciation | 553,300 72 | 733,106 33 | 25,457,363 21 |
| Current Working Assets: | | | |
| Inventories | | $10,813,429 92 | |
| Accounts receivable | | 1,510,144 34 | |
| Notes receivable | | 706,952 34 | |
| Liberty bonds:— | | | |
| Due from employees | $140,429 50 | | |
| Company ownership | 34,750 00 | 175,179 50 | |
| Cash | $1,852,304 61 | | |
| Sight drafts, with bills of lading attached, out for collection (discounted to the amount of $1,071,319.60—(see opposite) | 2,946,384 08 | 4,798,688 69 | |
| | | $18,004,394 79 | |
| Less—Reserve for accounts doubtful of collection | | 114,401 62 | 17,889,993 17 |
| Sinking fund—Central Trust Company of New York, trustee: | | | |
| Cash | | $21,078 65 | |
| Securities (first preferred voting trust certificates) | | 329,106 00 | 350,184 65 |
| Total | | | $50,804,146 37 |

### LIABILITIES.

| | | | |
|---|---|---|---|
| Capital Liabilities: | | | |
| First preferred | | $13,915,142 01 | |
| Second preferred | $11,000,000 00 | | |
| Less—In treasury | 872,532 01 | 10,127,467 99 | |
| Common | $13,000,000 00 | | |
| Less—In treasury | 221,942 42 | 12,778,057 58 | $36,820,667 58 |
| Balance due on plant's construction | | | 172,018 33 |
| Current Liabilities: | | | |
| Acounts payable—Audited vouchers | | $1,932,991 10 | |
| Accounts payable—Unaudited vouchers | | 945,439 71 | |
| Wages—Accrued | | 106,082 14 | |
| Taxes, insurance, etc.—Accrued | | 293,744 64 | |
| Customers' deposits | | 418,525 89 | |
| Due on contracts, etc | | 643,913 04 | |
| Liberty Bonds, subscription | | 197,000 00 | |
| Sight drafts on customers—Discounted | | 1,071,319 60 | 5,609,016 12 |
| Reserve for contingencies | | | 185,000 00 |
| Corporate Surplus: | | | |
| Undivided surplus—July 31, 1916 | | $5,510,775 36 | |
| Net income for the year ended July 31, 1917 | | 5,507,697 01 | |
| | | $11,018,472 37 | |
| Deductions:— | | | |
| Dividends paid during the year | $2,861,876 61 | | |
| Sinking fund appropriation | 139,151 42 | 3,001,028 03 | 8,017,444 34 |
| Total | | | $50,804,146 37 |

## CHANDLER MOTOR CAR PROFITS WERE $2,110,000.

The Chandler Motor Car Co. for the period from Jan. 1, 1917, to Oct. 1, 1917, made net earnings of $2,110,000, at the rate of $30 per share as against $1,339,000 in the same period of 1916, or $19 per share. The increase in car shipments in the last period as compared with the previous period was 33 per cent.

## B. F. GOODRICH WILL ISSUE $15,000,000 SIX PER CENT NOTES.

The B. F. Goodrich Co., Akron, O., will sell an issue of $15,000,000 six per cent. notes to a group of New York bankers, the proceeds to be used to carry the unusually large inventories of raw materials made necessary owing to the war and consequent uncertainty of shipping intercourse with the far east. The notes will be in serial form at three months time and will provide for the required renewals and it is understood that there will be no public offering.

## NEW TIRE FABRIC CO. AT APPONAUG, R. I.

Andrew E. Johnson of Attleboro, Mass., is head of a new company that will manufacture tire fabric at Apponaug, R. I. The production schedule for the first week calls for 50,000 pounds weekly. A weaving shed to house 100 looms has been planned and is expected to be ready for work in December. Another building to accommodate 15,000 spindles will be erected later.

## ELGIN ASSETS INCREASE 38 PER CENT. IN SIX MONTHS.

The balance sheet of the Elgin Motor Car Corporation of Chicago for July 31, 1917, as compared with the company's statement as of Jan. 31, 1917, shows an increase in total assets for the six months from $2,123,397.86 to $2,941,454.83, or 38.5 per cent. The cash on hand and in banks increased during the period from $168,679.06 to $321,859.98, an increase of 90 per cent. There was an increase of 54.5 per cent. in the valuation of parts and materials from $542,248.49 to $838,003.16.

The balance sheet as of July 31, 1917, is as follows:

### ASSETS.

| | |
|---|---|
| Cash on hand and in banks | $321,859 98 |
| Accounts, notes and bills receivable | 461,096 78 |
| Parts, material and advances paid on material | 838,003 16 |
| Prepaid rent and insurance | 1,013 30 |
| Miscellaneous prepaid items | 28,262 85 |
| Real estate and buildings | 160,774 52 |
| Machinery and equipment | 36,144 66 |
| Furniture and fixtures | 10,599 91 |
| Used cars | 3,865 88 |
| Cost of motor design and sample motors | 13,156 63 |
| Good will, etc | 400,000 00 |
| Car designs, trade name, patterns, etc | 203,919 05 |
| Commission, discount and stock sales expense | 230,019 87 |
| Stock in other companies | 45,748 30 |
| Deferred charges to operations | 186,989 93 |
| Total | $2,941,454 83 |

### LIABILITIES.

| | |
|---|---|
| Current accounts payable | $133,986 40 |
| Deposits from dealers on motor car contracts | 38,739 40 |
| Accrued pay roll | 113 31 |
| Bonds and accrued interest | 66,080 00 |
| Deferred payments on land | 28,465 00 |
| Capital stock issued and outstanding | 2,572,394 00 |
| Contingent funds | 101,676 72 |
| Total | $2,941,454 83 |

## FIXING STEEL PRICES HAS LITTLE EFFECT ON CARS.

The impression that gained ground regarding the effect on motor cars of fixing steel prices, seems to have little foundation, as the government prices apply to base steels, and these products are not used to any great extent by the motor car manufacturers. Even if the alloy steels, which are used in cars, should decline later in sympathy with the reduction of the prices for base steels, the effect would not be felt within a year or so and even then it would make a difference of less than two per cent. in the selling price of a car.

## NEW AUTO SERVICE OPENED.

The Parkway Auto Service Co., a new concern, located at 2317 Pennsylvania avenue, Philadelphia, Pa., does repair work of highest, standard quality with experienced automobile mechanics. The shop is equipped to handle all sorts of repair work. Emergency jobs are especially solicited.

**Over 500 Thoroughly Patriotic and Earnest Women from All Parts of America Met at the National Cash Register Company's Wives of Salesmen's Convention and It Was a Record Week for Orders—Delegates Pictured on the Steps of the N. C. R. Schoolhouse.**

# N.C.R. Convention of Wives Success

### Big Industry Shows Women How to Make Better Salesmen of Their Husbands.

JOHN H. PATTERSON, president of ton, O., recognizing women's equal-the National Cash Register Co., Day-ity in the sales field and the acumen of man's better half, entertained more than 500 wives of sales agents and salesmen at the factory recently and took them into the confidence of the business.

Morning, afternoon and evening sessions were held during the convention, at which the wives were told of the company's policy, methods of selling and profits of sales. They were also taken on a trip through the factory and shown the various manufacturing operations required to produce a cash register. After they had learned of the usefulness of the cash register in practically every business, and the problems which confront their husbands in disposing of them, they were instructed in assisting them to become better salesmen.

The convention was held in the famous N. C. R. School House, which had been specially placarded for the meetings. There were two big feature posters on the wall. One set forth the following rules for the wives:

"Ten things an N. C. R. woman can do." These were as follows: (1) Serve simple food; (2) keep him cheerful; (3) give him plenty fresh air; (4) see that he gets plenty of sleep; (5) lend encouragement at the right time; (6) encourage him to take regular exercise; (7) be economical and save for a rainy day; (8) take a new interest in his sales record; (9) study merchants' needs and help husband with tips; (10) read N. C. R. advertising and call attention to important things.

The other poster, illustrated with a bag of money from which dollars were leaking, bore the legend: "Leaks in his earnings." And these were designated as follows: (1) Spends too much time at home; (2) eats too much; loses energy; (3) does not use simple methods; (4) lacks ambition—self-satisfied; (5) does not cover his territory; (6) fails to study—lacks interest in business; (7) does not read and use advertising. Below was this suggestion: "You can help him stop these leaks."

## SILCO GREASE.

The fundamental principle of efficient lubrication is the efficient application of a lubricant scientifically compounded. In a transmission or differential, not only must the fundamental principle be adhered to, but the lubricant must possess a certain quality of body so that it will both lubricate and cling to the gear teeth at the point of pressure.

It is said that Silco transmission and differential grease has all the qualities necessary for this class of lubrication. It maintains its consistency under all conditions, and at different temperatures. This lubricant is made from a base of super refined steam oil, which is said to be the best gear lubricant base known.

In addition to the regular line of transmission and differential grease, the manufacturers produce a cup grease which they claim will not drip or run from the bearings, which is also made from super refined oil base; a compounded graphite grease for lubricating brakes, circulating pumps, steering gears and wherever graphite grease is required; and a spring lubricant which is unaffected by water or temperature and guaranteed not to run from the springs.

The manufacturers, International Lubricants Co., have a factory at Medford, Mass., with branch offices at 75 State street, Boston, Mass., and at 51 East 42nd street, New York, N. Y. Dealers or users of lubricants of high quality are invited to write for particulars relative to the Silco line.

# M.A.M. Credit Men Extend Campaign

### Bureau Work Enlarged at Big Convention That Takes Hold of War and Business Matters.

The credit managers of the member firms of the Motor and Accessory Manufacturers, Inc., held a meeting at Cleveland, on Oct. 17, at which plans were discussed for the extension of the work of the credit bureau of the organization. On Oct. 18 the board of directors met and acted on a number of important matters that have been brought up since the last meeting.

Including the new members the organization now has a total of 282, the largest number in its history. The new members are: Menominee Electric Products, Inc., New York; G. L. W. Spring Oiler Co., San Diego, Cal.; Central Steel Co., Massilon, O.; Kales Stamping Co., Detroit, Mich.

Announcement of change of corporate names were made as follows: American Bronze Co., Berwyn, Pa., to American Bronze Corporation; Wagner Specialty Co., New York, to Gibralter Jack Co.

Attorney Sidney S. Meyers gave an opinion on the Morrison bill, the bogus parts question and on section three of the Federal Food Bill. There were over 135 men present and it was voted to invest $25,000 in the new Liberty loan.

## ADVERTISING CO. INCORPORATES.

The advertising agency formerly conducted by Arthur C. Rogers has been incorporated under the laws of Ohio as the Rogers-Brett-Baker Co., with headquarters in suite 817 Guardian building, Cleveland, O. The board of directors is composed of the following officers: President, Arthur C. Rogers; vice president, Allen Brett; secretary, William Henry Baker; treasurer, Lewis Wintermute, and Louis E. Myers.

# EXHIBITORS AT ACCESSORY SHOWS

## Allotments of Space Made to 109 Members of Motor and Accessory Manufacturers—Complete List

The National Automobile Shows to be held in New York and Chicago during the coming winter will be the largest exhibitions of motor cars and accessories ever staged in those two cities. Not only will they have a greater number of cars on exhibition, but the displays of accessories and parts will outnumber those of any previous show.

The show and allotments committee of the Motor and Accessory Manufacturers has alloted space to 109 members of the association, the majority of which will exhibit at both New York and Chicago, and with the allotments of space to nonmembers the total number of exhibits of accessories will reach close to the record mark of 300.

In fact the demand for space has been so great that the members of the M. & A. M. have been obliged to take less space than they asked for, having taken approximately 50,000 square feet of show space for the Grand Central Palace exhibition in New York, which is to be held Jan. 5-12, and for the Chicago exhibition, which will be held in the Coliseum and annex buildings, Jan. 26 to Feb. 2.

### M. A. M. EXHIBITORS AT NATIONAL SHOWS.

A-B-C Starter Co., Detroit, Mich.
American Bronze Co., Berwyn, Pa.
American Ever Ready Works, Long Island City, N. Y.
Anderson Forge and Machine Co., Detroit, Mich.
Au-To Compressor Co., Wilmington, O.

Becker Brothers, Chicago, Ill.
Benford Mfg. Co., Mt. Vernon, N. Y.
Brown-Lipe-Chapin Co., Syracuse, N. Y.
Brown-Lipe Gear Co., Syracuse, N. Y.
Brunner Mfg. Co., Utica, N. Y.
Buda Co., The, Harvey, Ill.
Byrne, Kingston & Co., Kokomo, Ind.

Century-Plainfield Tire Co., Plainfield, N. J.
Champion Ignition Co., Flint, Mich.
Clark Equipment Co., Buchanan, Mich.
Continental Motors Co., Detroit, Mich.
Corbin Screw Corp., New Britain, Conn.
Corcoran-Victor Co., Cincinnati, O.
Corning Glass Works, Corning, N. Y.
Cowles & Co., New Haven, Conn.

Dann Products Co., Cleveland, O.
Detroit Pressed Steel Co., Detroit, Mich.
Dixon Crucible Co., Jersey City, N. J.
Doehler Die Casting Co., Brooklyn, N. Y.
Du Bois Piston Ring Co., Inc., Albany, N. Y.

E. A. Laboratories, Inc., Brooklyn, N. Y.
Eclipse Machine Co., Elmira, N. Y.
Edison Storage Battery Co., Orange, N. J.
Electric Storage Battery Co., Philadelphia, Pa.

Findeisen & Kropf Mfg. Co., Chicago, Ill.

Gabriel Mfg. Co., Cleveland, O.
Gemco Mfg. Co., Milwaukee, Wis.
General Electric Co., Schenectady, N. Y.
Gould Storage Battery Co., New York, N. Y.
Gray & Davis, Inc., Boston, Mass.

Halladay Co., Streator, Ill
Harrison Radiator Corp., Lockport, N. Y
Hartford, Inc., Edward V., Jersey City N. J.
Hassler, Robert H., Indianapolis, Ind.
Hayes Mfg. Co., Detroit, Mich.
Hayes Wheel Co., Jackson, Mich.
Heinze Co., The John O., Springfield, O.
Heinze Electric Co., Lowell, Mass.

Imperial Brass Mfg. Co., Chicago, Ill.

Kellogg Mfg. Co., Rochester, N. Y.
Kent Mfg. Works, Atwater, Philadelphia, Pa.
Klaxon Co., Newark, N. J.

Lipman Air Appliance Co., Beloit, Wis.

Mann Co., F. W., Milford, Mass.
Merchant & Evans Co., Philadelphia, Pa.
Metal Stamping Co., Long Island City, N. Y.
Miller Transmission Co., New York City.
Mosler & Co., A. R., Mt. Vernon, N. Y.
Moto-Meter Co., Inc., Long Island City, N. Y.

National Carbon Co., Cleveland, O.
New Era Spring & Specialty Co., Detroit, Mich.
New York Coil Co., New York, N. Y.

Oakes Co., Indianapolis, Ind.

Pantasote Co., New York, N. Y.
Parker Rust Proof Co. of America, Detroit, Mich.
Parry Mfg. Co., Indianapolis, Ind.
Philips-Brinton Co., Kennett Square, Pa.
Piel Co., Long Island City, N. Y.

Rand Mfg. Co., Inc., Haverhill, Mass.
Rowe Calk Co., Hartford, Conn.

S K F Ball Bearing Co., Hartford, Conn.
Schrader's Son, Inc., A., Brooklyn, N. Y.
Shakespeare Co., Kalamazoo, Mich.
Shaler Co., C. A., Waupun, Wis.
Sparks-Withington Co., Jackson, Mich.
Splitdorf Electrical Co., Newark, N. J.
Standard Parts Co., Cleveland, O.
Standard Thermometer Co., Boston, Mass.
Standard Woven Fabric Co., Walpole, Mass.
Stewart-Warner Speedometer Corp., Chicago, Ill.
Stromberg Motor Devices Co., Chicago, Ill.
Superior Lamp Mfg. Co., Inc., New York, N. Y.

Taft-Pierce Mfg. Co., Woonsocket, R. I.

Universal Shock Eliminator, Inc., New York, N. Y.

Vacuum Oil Co., New York, N. Y.
Van Sicklen Co., Elgin, Ill.
Veeder Mfg. Co., Hartford, Conn.
Vesta Accumulator Co., Chicago, Ill.
Voorhees Rubber Mfg. Co., Jersey City, N. J.

Wagner Specialty Co., New York, N. Y.
Waltham Watch Co., Waltham, Mass.
Warner Gear Co., Muncie, Ind.
Warner Lenz Co., Chicago, Ill.
Waukesha Motor Co., Waukesha, Wis.
West Side Foundry Co., Troy, N. Y.
Wheeler-Schebler Carburetor Co., Inc., Indianapolis, Ind.
Willard Storage Battery Co., Cleveland, O
Wilson Body Co., C. R., Detroit, Mich.
Wilson & Co., Chicago, Ill.
Woodworth Mfg. Co., Niagara Falls, N. Y

### New York Only.

Breeze Mfg. Co., Newark, N. J.
Budd Mfg. Co., Philadelphia, Pa.
English & Mersik Co., New Haven, Conn.
Ericson Mfg. Co., Buffalo, N. Y.
Hale & Kilborn Co., Philadelphia, Pa.
Hartford Machine Co., Hartford, Conn.
Herz & Co., New York City.
Janney-Steinmetz & Co., Philadelphia, Pa.
Light Mfg. & Foundry Co., Pottstown, Pa.
Morse Chain Co., Utica, N. Y.
New York Coil Co., New York City.
Pantasote Co., New York City.
Sparks-Withington Co., Philadelphia, Pa.
Stewart-Warner Speedometer Corp., Chicago, Ill.
Syracuse Malleable Iron Works, Syracuse, N. Y.
Wilson Body Co., C. R., Detroit, Mich.
Zenith Carburetor Co., Detroit, Mich.

### Chicago Only.

Continental Motors Co., Detroit, Mich.
Edison Storage Battery Co., Orange, N. J.
General Electric Co., Schenectady, N. Y.
Imperial Brass Mfg. Co., Chicago, Ill.
Oakes Co., Indianapolis, Ind.
Vesta Accumulator Co., Chicago, Ill.
Wagner Specialty Co., New York.
Warner Gear Co., Muncie, Ind.
Waukesha Motor Co., Waukesha, Wis.

## ANNOUNCE DATES FOR 1918 AUTOMOBILE SALON.

At the meeting of the directors of the Automobile Salon held in New York it was decided to hold the 1918 Automobile Salon as usual in the grand ball room of the Astor from Jan. 2 to 9 inclusive, and in the Elizabethan room of the Congress Hotel in Chicago from Jan. 26 to Feb. 2 inclusive.

Space in the Salons has been taken for the following cars: Rolls-Royce, White, Lancia, Locomobile, Simplex, Brewster, Daniels, Fergus, Murray, Cunningham and Biddle. Brewster, Rubay and Brooks-Ostruck bodies will also be shown and a number of accessories and tires.

The directors elected the following officers: President, E. Lascaris; vice presidents, Thomas E. Adams and Leon Rubay; secretary-treasurer, Robert W. Schuette.

## STUDEBAKER TAKES ANOTHER MILLION OF LIBERTY BONDS.

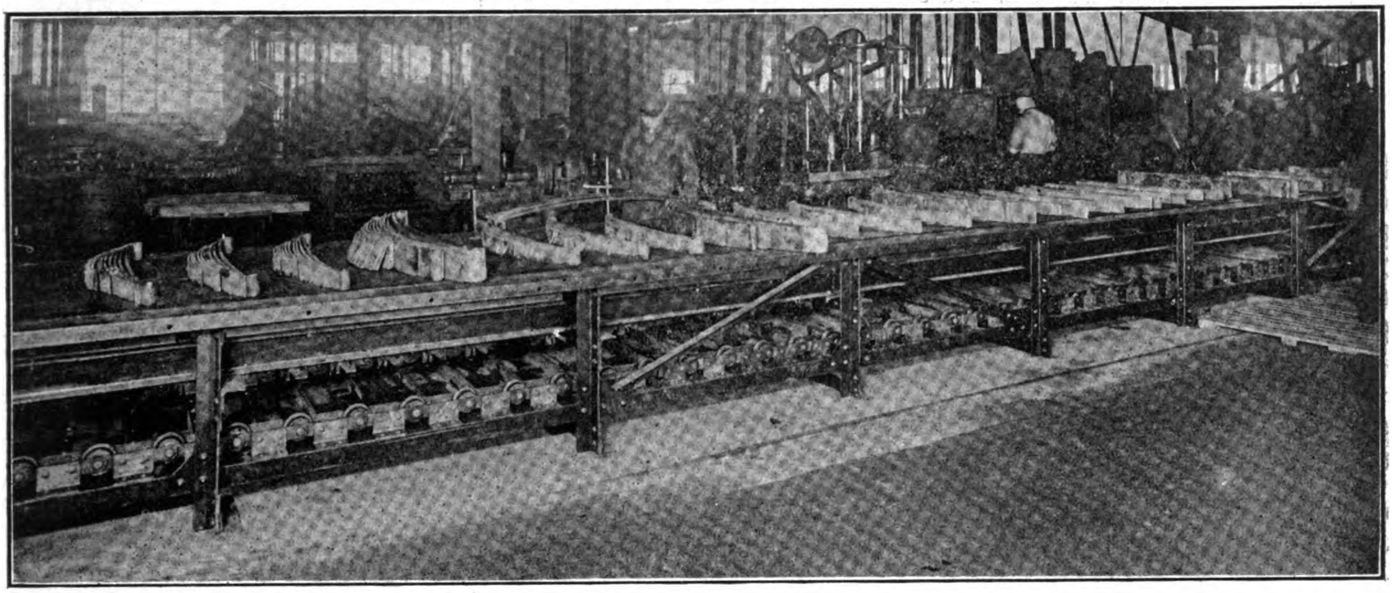
The Studebaker Corporation has subscribed to a million dollars of Liberty Bonds, making the second subscription of this amount taken by the company.

"As in the case of the $1,000,000 purchased of the first Liberty loan," says President Erskine, "employees of the corporation will be given an opportunity to buy a bond of one of the denominations on the partial payment plan."

## DENVER AUTOMOBILE SHOW NOV. 12TH TO 18TH.

The Denver automobile show, which will be held in that city Nov. 12th to 18th inclusive, under the auspices of the Denver Civic Association, Auto Trades Division, will be the largest exhibition of its kind ever held in the central west. Forty five motor car dealers will exhibit over 120 different models and 50 motor car accessory dealers have already applied for space.

The show is being managed by G. A. Wahlgren.



**Movable Assembly and Inspection Platform Installed in the Spring Factory of the Detroit Steel Products Co., Showing Centrally the Grinding of the Spring Ends, the Third of 12 Successive Operations All Performed on the Platform.**

# HAPPENINGS AMONG THE CAR AND PARTS MAKERS

## What Several of the Leading Manufacturers in the Motor Vehicle Industry and Allied Lines Are Doing or Have Under Consideration

**The Detroit Steel Products Co.**, Detroit, Mich., recently installed a movable assembly and inspection platform in its spring factory, which has aided materially in speeding up production, simplified assembling and effected other valuable economies and improvement of the product. The platform employs 25 men, who do the work formerly requiring 45 men. It has a capacity of approximately 40 tons of springs a day. After the spring leaves have been collected the first operation is performed—facing the long plate, that is grinding the sides of the curved loop at the ends to make it perfectly square and smooth. After this operation comes the reaming of the eye, to .001 of an inch, and in perfect alignment with the backs. The next operation, illustrated in the accompanying picture, shows the grinding of the spring ends. Successive operations—all performed on the platform, include (4) polishing the back and plates of the springs, (5) riveting spring clips, (6) lubricating spring leaves, (7) assembling leaves, (8) first inspection for fit of spring and to see that leaves are all turned in proper direction and are in proper order, (9) and (10) "bull-doze" test and capacity test, (11) placing and riveting clip bolts, (12) final inspection.

**The Prest-O-Lite Co., Inc.**, Indianapolis, Ind., has appointed the following service stations: Laser Motor Co., Pine Bluff, Ark.; J. S. Brooks Co., Keysville, Va.; H. H. Bryan, Lawrence avenue, Charlotte, Mich.; McMillan & Jones, Bakersfield, Cal.; F. Sippel Auto Co., Joliet, Ill.; Garber Buick Co., Greenville, Ind.; Inland Motor Sales Corp., 818 Central avenue, Connersville, Ind.; Howze Motor Co., Inc., Demopolis, Ala.; Boardman, Vogel & McGrea, 29 S. Third street, St. Petersburg, Fla.

**The New Era Spring and Specialty Co.** is discontinuing its main sales office at Detroit, Mich., and establishing its general headquarters at their factory at Grand Rapids, Mich. This will enable them to keep in closer touch with manufacturing conditions at the plant.

**The Motor Parts Co.** has leased the entire modern building, approximately 23,000 square feet, at 104-106 Brookline avenue, and will remove in November. The company is still at 185-186 Columbus avenue. The new building will be thoroughly equipped for sales, service, repair and installation of Bosch ignition, starting and lighting equipment. S. Uswald is in charge of sales of the organization.

**The Amazon Rubber Co.** of Akron have moved their New York branch to Sherman square, Broadway and 70th streets. Owen Moynihan, eastern district manager, is in charge of the branch.

**The Security Tire and Rubber Co.**, Cleveland, O., will build a plant at Wellington, O., where it will manufacture its products. The company makes a tire that does not require inflation and is capitalized for $1,000,000.

**The American Brass Foundry Co.**, Milwaukee, Wis., has changed its name to the American Metal Parts Co. The policies of the firm and the personnel will remain the same, except that S. A. Fulton has bought an interest and is now president.

**The Moon Motor Car Co.**, St. Louis, Mo., has taken over the works of the Joseph W. Moon Buggy Co. Additional factory space and machinery, it is announced, assures the completion of 20,000 of the new sixes.

**Fuller & Sons Mfg. Co.**, Kalamazoo, Mich., have begun to move and install machinery and equipment in their new factory building, now rapidly nearing completion. The new heating plant is practically ready for use. The addition of these two buildings will more than double the floor space. This will put the company in far better condition to make prompt deliveries during 1918.

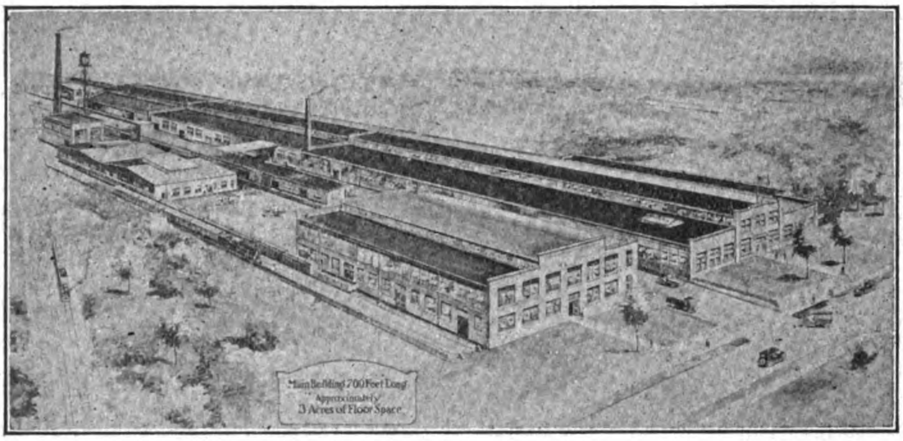
**The Ecorse Foundry and Machine Co.** will build a 160 foot addition to its plant. When in full operation the company anticipates the employment of 750 workers and the use of 200 tons of ore daily.

**The Liberty Motor Co. of Canada, Ltd.**, Windsor, Ont., has been incorporated with a capital of $10,000. The incorporators are Percy Owen, president of the Liberty Motor Car Co., Detroit, Mich.; James F. Bourquin and Harland M. Wirth.

**The Simplex Tractor Co.**, Wichita, Kan., has been incorporated with a capital of $300,000 and will erect a plant and manufacture 1000 farm tractors per year. The Simplex tractor burns kerosene and uses one lever for control. There are two forward speeds and one reverse. The incorporators include James P. Sullivan, O. D. Barnes, R. C. Fisher, W. Magill, C. Franks, F. O. Stone, I. N. Williams, Henry Bockelman and A. E. Alport.

**The Cleveland Motor Plow Co.**, Cleveland, O., has changed its name to the Cleveland Tractor Co. The company is arranging to increase the capital stock from $600,000 to $6,000,000. Additions are being built which will give the company a capacity for 8000 tractors.

**The Fulton Co.**, Milwaukee, Wis., has removed its offices to its new factory



**The Completed Plant of the Torbensen Axle Co., at Cleveland, the Main Building, 700 Feet Long, Having Three Acres Floor Space.**

building, 1710 St. Paul avenue. Several new accessories have been added, including the Eklips spark plug, the products of the C. & E. Co. of Marshalltown, Ia., and the bumpers of the American Metal Parts Co., Milwaukee.

**The Dunham Co.**, Berea, O., has opened its new general offices in Cleveland, O. The offices are located in suite 801-804 Hippodrome building. The foundries are still retained at Berea.

**The Air-O-Flex Automobile Corp.**, Detroit, Mich., plans the manufacture of a newly patented Air-O-Flex suspension cylinder. The company manufactures a 1½-ton truck. G. M. Walker, Jr., is president.

**The Clark Equipment Co.**, successors to the Celfor Tool Co. and Buchanan Electric Steel Co., will hereafter market their products under the trade name of "Clark" instead of "Celfor" and "Besco," the names that were used by the two subsidiaries, respectively. Over 1000 truck axles per month are now being turned out by the company in its new axle shops. A complete line is being manufactured from ½-ton to five-tons. The company is also operating its own steel plant, which is equipped with the most modern types of electric furnaces and also one of the most completely equipped wheel plants in the country, turning out wheels night and day for the Packard Motor Car Co., Nash Motors Co., Winther Motor Truck Co., United Motors Co. and others. The wheel plant is equipped with one of the largest batteries of the latest type of Bullard vertical turret lathes.

**The Racine Rubber Co.**, Racine, Wis., has outgrown its present plant to such an extent that it has been found necessary to purchase land for additional adjoining three-story building, which will have an area of 85,000 square feet.

**The Cruiser Motor Car Co.**, Madison, Wis., has been incorporated with a capital of $250,000 and will manufacture a new type of convertible touring and camping car.

**The H. H. Franklin Manufacturing Co.**, Syracuse, N. Y., is planning to increase its production to 1000 cars a month for the next six months, as compared with 5000 manufactured during the past six months.

**The Mason Tire and Rubber Co.** held its general sales convention recently, which included the entire sales force throughout the United States. An elaborate programme was arranged. All phases of marketing the Mason tire were discussed, as well as problems that confronted the sales man. The company will double the capacity of its plant to take care of a product of 1500 tires a day.

**The Timken-Detroit Axle Co.**, Detroit, Mich., is building a one story steel frame storage building, 50 by 105 feet.

**The Wayne Oil Tank and Pump Co.**, Fort Wayne, Ind., has had the three additions completed to its plant. The floor space has been more than doubled. Four acres have been purchased and will be used for another addition.

**The Torbensen Axle Co.**, manufacturer of internal gear drive truck axles, Cleveland, O., has completed its plant to the plans made when work was begun a little over a year ago, giving the company facilities to meet its present requirements. Rising demand may, however, require another increase if the production capacity becomes pressed again, as it has been in the past.

**The Moreland Truck Co.**, Los Angeles, Cal., has started the erection of the first unit of its new plant at Burbank. The works will cost over $500,000 and will be devoted in part to the manufacture of tractors of both high wheel and caterpillar types, suitable for light and heavy work, ranging from 30 to 75 horsepower.

**The Frost Gear and Machine Co.** has contracted with the Moline Plow Co. to manufacture gears for a new tractor which the Moline company will place on the market. The Moline Plow Co. is building a new plant and has a schedule for 21,000 tractors for 1918.

**The Republic Motor Truck Co.**, Alma, Mich., in the year ended June 30, 1917, sold 12,917 trucks, as compared with 3851 in 1917.

**The Oakland Motor Car Co.** has placed a special equipment contract with the Edward Cassidy Co., New York, for 10,000 Cassco engine driven tire pumps.

**The Standard Steel Castings Co.** has entered the cast steel wheel field for motor cars. A plant with a capacity of 400 wheels daily will be built. The capital has been increased to $1,000,000.

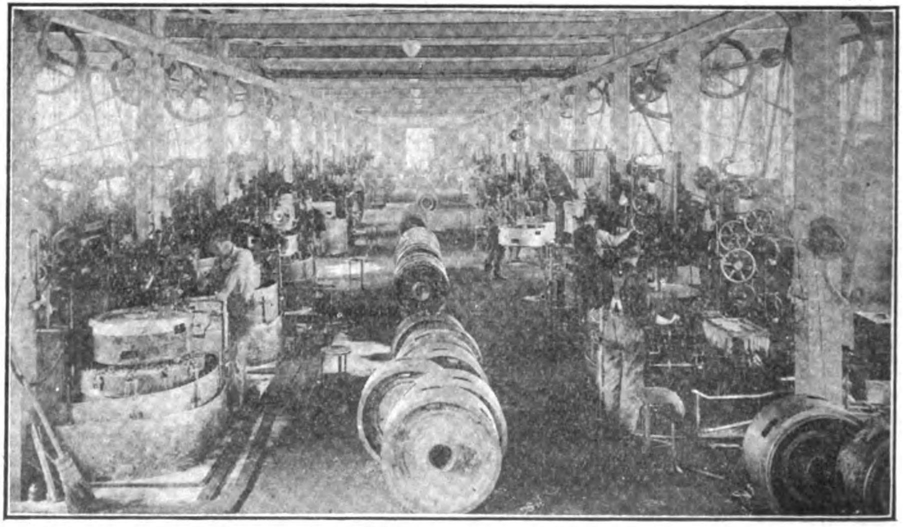
**The Buhl Stamping Co.**, Detroit, Mich., is building a $500,000 plant, which will contain six acres of floor space.

**The General Motors Co.** has completed plans for the construction of a new drop forge plant. It will consist of three one-story buildings and will cost $300,000. The plant will be 160 by 600 feet, 75 by 60 feet and 65 by 300 feet.

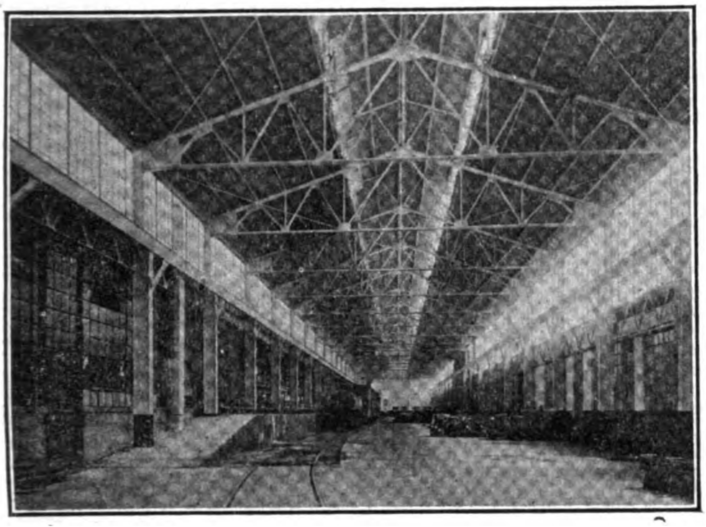
**The Paige Motor Car Corp.**, Detroit, Mich., has acquired from the Williams Brothers Pickling Co. a four-story building and basement and will be used for assembling of closed cars and for chassis and final assembly work.

**The Tom Thumb Tractor Co.**, Minneapolis, Minn., has been reorganized and will be known as the Federal Tractor Co. The company will continue to manufacture the Tom Thumb tractor.

**The Nordyke & Marmon Co.**, Indianapolis, Ind., has been awarded a contract which calls for the delivery of 3000 airplanes for the U. S. government. The value of the order is $2,700,000 and delivery is to be made prior to June, 1918.



**Clark Equipment Co. Works at Buchanan, Mich., Showing an Interior View of the Wheel Shop.**



The Sheltered Shipping and Receiving Platform Just Completed at the Works of Continental Motors Corporation, Detroit, Mich.

**The Fox Auto Radiator Co.**, Philadelphia, Pa., will erect a new factory on Vine street, near 13th street, to cost about $8500.

**The International Motor Car Co.**, Allentown, Pa., has received an order from the government for 1000 motor trucks, each having a capacity of eight tons. The work will be handled at the local plant.

**The Fifth Avenue Coach Co.**, 10 East 102nd street, New York, N. Y., has filed plans for the erection of a five and seven-story factory. It will be 400 by 425 feet and located on 132nd street, near Broadway. The factory will cost $1,000,000 and will be used for the manufacture of electric motor 'buses. Richard W. Meade is president.

**The Stutz Motor Car Co.**, Indianapolis, Ind., will construct a new concrete and steel machine shop to cost $40,000. The shop will be constructed near the company's present plant at 10th and Roanoke streets.

**The Waukesha Truck Brake Co.**, Waukesha, Wis., will manufacture a braking system for motor trucks, designed by F. H. Halladay, Appleton, Wis. The company has elected the following officers: President, E. L. Arnold; vice president, J. L. Able; secretary, F. H. Halladay; treasurer, W. S. Halladay.

**The Standard Woven Fabric Co.**, Bridgeport, Conn., has issued a booklet entitled "Dimensions of Brake Linings and Truck Facings." It contains full dimensions of brake lining and truck facings for practically all cars built within the past four or five years and should prove very valuable to the repair man.

**The Lincoln Motor Co.**, Anderson, Ind., which was recently organized, has commenced operations. The company will manufacture motor trucks. The officers of the company are: President, R. J. Walker; vice president, M. G. O'Brien; assistant manager, Ernest Bausch; secretary, Albert Lowman.

**The Barnes Foundry and Manufacturing Co.**, Detroit, Mich., is starting the construction of its new plant on the River Rouge. The first unit of the plant will occupy one-third of the property and represents an investment of $350,000.

**The Nordyke & Marmon Co.**, Indianapolis, Ind., which has a contract for manufacturing airplane motors for the United States government, will make additions to its plant to cost about $120,000. This makes the third large addition built during the last 90 days.

**The Olympian Motors Co.**, Pontiac, Mich., is bringing out three styles of closed cars, including a sedan, Springfield type, coupe and winter detachable top. The Olympian company has given special attention to finish, trimmings and upholstery. The doors on all models are wide and the cars are roomy.

**The Blue Ribbon Body Co.**, Bridgeport, Conn., has established a New York sales office at 1823 Broadway. Charles Baasch, formerly with the Springfield Body Corporation, has been appointed manager.

**The Rubber Products Co.**, Barberton, O., manufacturer of Stronghold tires and tubes, has removed its New York branch from 148 West 68th street to 243 West 55th street. James H. Riley, who formerly represented the company in New England territory, is now manager of the New York branch.

**The Master Carburetor Co.**, Los Angeles, Cal., has purchased the manufacturing rights for the Master carburetor from the Master Carburetor Corporation.

**The Continental Motors Corporation** has been making additions to its big plant in Detroit this season, including a modern steel and concrete shipping terminal building. The test house and shipping department are located on one side of the building and a crane in the test house carries the engines to the shipping platform.

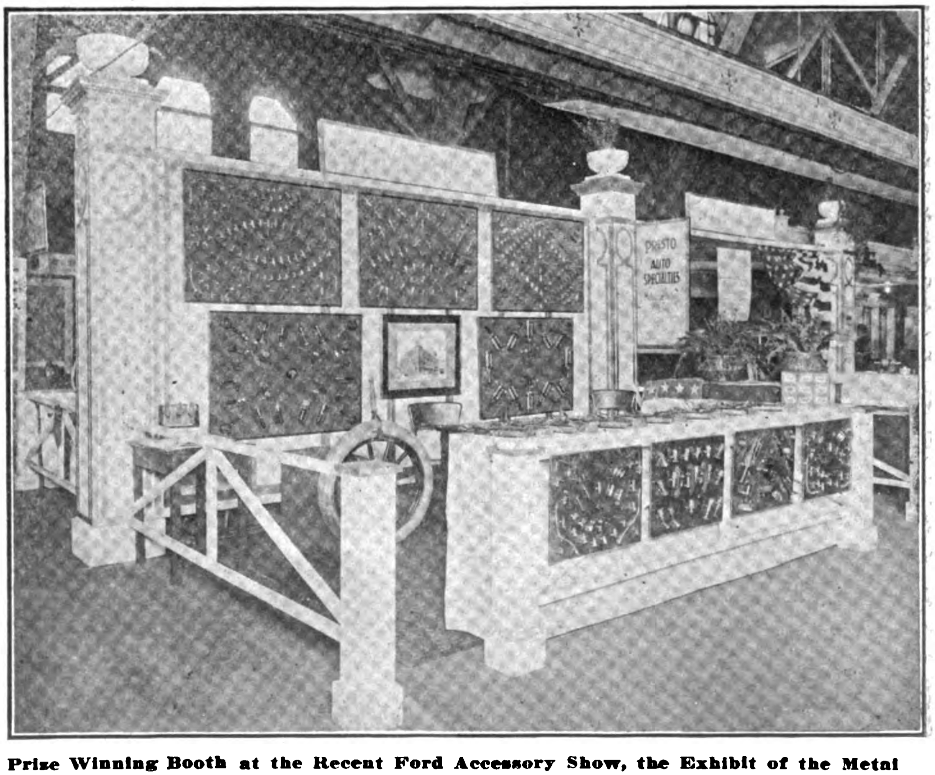
**The Metal Specialties Co.** of Chicago, Ill., was awarded the first prize for the most complete and easily understood exhibit at the recent Ford Accessory Show. This firm makes the Presto line of automobile accessories.

**The Stewart Manufacturing Co.**, Chicago, Ill., has purchased a 10-acre site in that city and will build a factory 300x300 feet. The company is now employing upwards of 700 men and has had such a rush of business lately that larger quarters have become necessary.

**The Hascall Manufacturing Co.**, Ludington, Mich., is reported to have received several large government contracts for veneer parts for airplanes and will invest $1,000,000 in a new plant and machinery. With the completion of the new factory the company will employ 3000 men.

**The Chevrolet Motor Co.** is planning the erection of a new $100,000 building and will also build an addition to the present plant, costing $30,000. Other building plans call for the outlay of $30,000 in factory improvements.

**The Mixrite Carburetor Co.**, Decatur, Ill., which is temporarily using the Faries manufacturing plant in that city, will erect a new plant for the manufacture of its carburetors. The company was recently incorporated with $30,000 capital. The incorporators are Charles Gillespie, Edward H. Williams and A. A. Granger.



Prize Winning Booth at the Recent Ford Accessory Show, the Exhibit of the Metal Specialties Co. of Chicago.

**Bearings Service Company's Agency Organizers: From Left to Right, Thomas L. Hutchinson, Harold Perkins and B. H. Boensch, Whose Work Will Be in All Parts of the Country East of the Rocky Mountains.**

# Activities of Prominent Men of the Industry

## Resignations, Promotions and Other News of the Personnel of Motor Vehicle Manufacturing and Merchandising Companies and Allied Businesses

**Thomas L. Hutchinson**, Harold Perkins and B. H. Boensch were recently appointed traveling representatives of the Bearings Service Co., who will in the course of a year establish approximately 450 agencies for the company in all sections of the United States. The country east of the Rocky mountains was divided into three parts and each representative in his territory started in September from headquarters at Boston, Kansas City and Detroit respectively. The purpose of the company is to bring its service within the reach of every motor vehicle dealer, garage man and owner. The 22 branches of the company operating in the large commercial centres of the country will be supplemented by the agencies, so that the entire United States will be covered.

**P. E. Minnock** has been appointed manager of the Des Moines Ford factory branch, succeeding B. F. Norman, who has resigned. Mr. Minnock was formerly manager of the branch at Columbus, O.

**A. B. Browne**, consulting engineer, New York, inventor of the Browne carburetor and part inventor of the Browne-Chase engine, has been commissioned captain in the medical corps, where he will be an inspector of ambulances.

**Edward Lurker** is now district sales manager in charge of the Chicago office of the Haynes Stellite Co. of Kokomo, Ind. The territory includes Wisconsin, Iowa, Minnesota and Illinois. In the past Mr. Lurker has been engineer in the home office.

**S. Uswald** will be in charge of sales of the Motor Parts, Boston. He was for the past nine years with the Bosch Magneto Co., New York, in charge of sales, in the technical and service departments.

**W. J. Andress** has resigned his position as salesman of the Cincinnati branch for the Firestone Tire and Rubber Co. He has opened an automobile accessory store in Moline, Ill., and carries the agency for Miller tires.

**C. F. Johnson**, formerly carburetor engineer for the Cadillac company for 12 years, has been appointed carburetor engineer for the Johnson Co., Detroit.

**Roy C. Davey** has resigned as advertising manager of the Chalmers Motor Co. to become assistant sales manager of the Bethlehem Motors Co. as special representative.

**A. J. Rogers**, advertising manager of the Nordyke & Marmon Co., has resigned to become a lieutenant in the United States army.

**H. J. Galvin** has taken charge of the new branch of the United Motors Service, Inc., at San Francisco. He had been service manager of the Remy company.

**Arthur E. Corbin** of the Russian Automotive Engineering Co., Petrograd, and formerly assistant sales manager of the Packard Motor Car Co., is now in Detroit. Mr. Corbin states that all business at the present time is with the government and that transportation is at a standstill. The Russian company with which he is associated handles Pierce-Arrow, Hupmobile and Hudson cars and Hurlburt and Federal trucks.

**H. J. Galvin, Manager of United Motors Service, Inc., New San Francisco Branch.**

**F. H. Akers** has been appointed assistant sales manager of the Reo Motor Car Co. He has been with the Reo company for the past five years as factory representative, covering the central western states.

**Edmund G. Siegerson** is now sales promotion manager for the McGraw Tire and Rubber Co., with headquarters at East Palestine, O. Mr. Siegerson was formerly branch manager at Albany and Buffalo for the Goodyear Tire and Rubber Co., and later supervising the sales promotion work through the mid-west.

**R. H. Southerland**, formerly foreign representative of the Splitdorf branch in London, has become manager of all the Splitdorf branches, with headquarters at New York.

**George Pearson, Jr.**, has been appointed supervisor of the retail sales of the Maxwell Motor Co. and will handle trucks.

**R. W. Fontaine** has taken charge of the sales department of the Havana Auto Co., representing Renault, Pierce-Arrow, Mercer, Premier, Hupmobile and Anderson cars. He was formerly special foreign representative of the Willys-Overland Co., Toledo, O.

**George R. Oberman** has resigned as manager of the San Antonio Motor Car Co. to become sales manager of the Clem Motor Car Co., Avenue C.

**Arthur M. Goodfellow** has been appointed western sales manager of the Nice Ball Bearing Co., Philadelphia. He was formerly associated with the Standard Roller Bearing Co.

**W. P. Berrien** has resigned as vice president and sales manager of the Batavia Rubber Co. He was formerly connected with the Firestone, Packard, Standard automobile and other companies.

**Webster Colburn** has severed his connection with the Dorris Motor Car Co., St. Louis, as second vice president.

**Lee M. Pierce** has been made manager of the used car department of the Brandle Motors Co., St. Louis, Mo. He has been for several years in the motor car trade.

**George C. Talburtt** has joined the Sangler & Berry organization as special representative by factory appointment for Portage tires. He has been long associated with Miller Brothers' Automobile Co.

**John F. Luhrman** has taken over the Cincinnati local distributing agency of the M. J. Moore Co. He was formerly with the Stearns-Knight sales department.

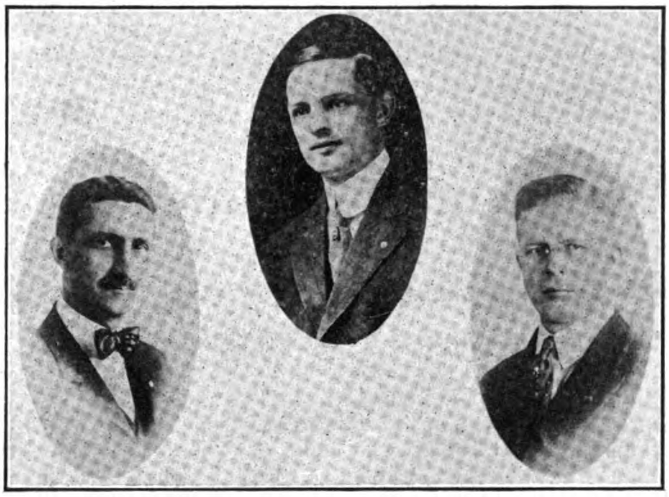
**Edward Hobbs** has become associated with the Yost Auto Co., Pittsburgh distributors of Crow-Elkhart and Moon automobiles. He was formerly in the automobile department of a newspaper in that city.

**Grover C. Davis**, formerly sales manager for the J. B. Van Wagoner Automobile Co., Pittsburgh, Pa., has taken a position with the Westcott Motor Co. He will cover the eastern district.

**E. W. Mohler** has been appointed distributor in the Pittsburg territory for the Scripps-Booth automobile. Mr. Mohler was formerly associated with the Buick company and has opened a sales room at Baum boulevard and Beatty street. He will have charge of the company known as the Mohler Motor Co.

**Wallace C. Hood** has been appointed sales manager for the King Eight of the King Motor Car Co., Detroit, Mich. He will put in effect plans for widening the distribution of the King Eight. Mr. Hood started in the automobile industry in 1902 as eastern and southern sales supervisor for the Rambler, made by the Thomas B. Jeffery Co., Kenosha, Wis. He organized the Wallace C. Hood Service Bureau in Detroit to give service to outside distributors and factories in the facilitating of shipments of stock. Mr. Hood will continue as president of the service bureau and will also retain his stock.

**G. W. Hewitt**, secretary-treasurer of the Duplex Truck Co., Lansing, Mich., states that the company's production of heavy haulage trucks will be increased to about 300 monthly during 1918, trebling the production on completion of the new factory building next month. Andrew Langenbacher, sales manager of the company, is developing an organization of dealers to market $12,000,000 worth of Duplex trucks the coming year. Mr. Langenbacher was formerly in charge of the export and divisional sales of the Reo Motor Car Co.


New Alignment Hyatt Motor Bearings Sales Division: Centre, B. G. Koether, Manager; Left, H. A. Brown, Jr., Sales Manager; Right, R. E. Wells, Engineer.

**H. C. Gentry** is now connected with the sales department of the Thermoid Rubber Co., Trenton, N. J. He was formerly with Acme Rubber Manufacturing Co. and also the Ajax Rubber Co., in the southern states.

**Rodney W. Day**, formerly manager of the Buffalo, N. Y., branch of the Fisk Rubber Co., has been appointed manager of its branch at Erie, Pa.

**W. H. Wishart** is now managing the Olympian Motor Sales Co., 134 North Highland avenue, Pittsburgh. He has had experience in the automobile business for a period of 10 years.

**B. G. Koether**, the new manager of the Hyatt motor bearings sales division; H. G. Brown, Jr., sales manager, and R. E. Wells, engineer, have honor places in the album just issued of the staff of Hyatt Quiet Roller Bearings. Mr. Koether, who is editor of the exhilarating Quieterion, has a record of 16 years with Hyatt, filling successively the posts of bookkeeper, purchasing agent, assistant sales manager and general sales manager prior to his latest promotion. Mr. Brown has been with the Hyatt company for 15 years, a bearing specialist and mechanical adept. Mr. Wells, before his alliance with Hyatt, was chief engineer of the American Gear and Axle Co. and assistant engineer of the Hupp Motor Car Corporation.

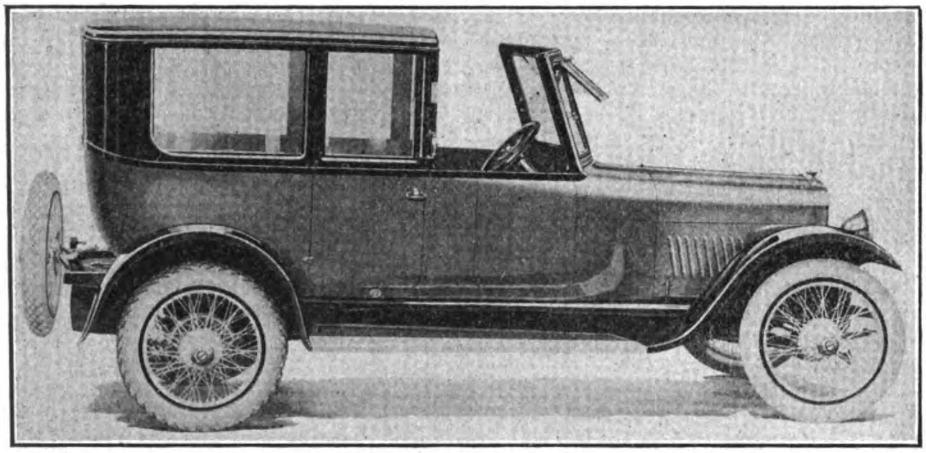
**George Piersol** has been added to the sales force of the Eastern Motors Corp., 1634 Chestnut street, distributors of the Standard Eight and Allen car. Mr. Piersol will devote his energies to the sale of the Standard Eight line exclusively. He comes from the Philadelphia branch of the Locomobile Company of America, with which company he was connected for 2½ years.

**F. E. Anderson** has been appointed sales manager for the H. H. Schusler Co., Pittsburgh, distributors of Marmon cars. Mr. Anderson was formerly associated with the Franklin Pittsburgh Co. and is a well known salesman of high grade motor cars.

Wallace C. Hood, Appointed Sales Manager of the King Motor Car Co., Detroit, Mich.

Andrew Langenbacher, Sales Manager Duplex Truck Co.

G. W. Hewitt, Secretary-Treasurer, Duplex Truck Co.



**Paige Town Car Model Six "55," Distinctive New Closed Car Type, Selling for $3230 f. o. b. Detroit. Described in the Automobile Journal, Sept. 25, 1917.**

# *Boston Drive for Winter Business*

## Big Closed Car Show Held in Dealers Salesrooms Exhibiting Sedans, Town Cars and 1918 Models

Boston dealers gave the motorists and the trade of New England the opportunity of inspecting the enclosed car lines of practically all the leading manufacturers in America during the week of Oct. 6-13 in Boston, where over 100 houses held individual exhibits of their winter models in their salesrooms. Hundreds of dealers from the six New England states, as well as thousands of motorists, visited the show rooms during the week and the exhibition as a whole was a pronounced success.

While each dealer handled his own display, provided his own decorations, the whole show was carried out on a coöperative basis under the auspices of the Boston Automobile Dealers' Association. It was the first closed car show held in the East and was somewhat in the way of an experiment, but it is believed that results will make it an annual institution, although some changes will undoubtedly be made in the plans of conducting the shows hereafter. The opinion has been advanced by some that it would be better to hold the show under one roof instead of individual show rooms, and to have it several weeks later in the season.

Preparations for the show were handled by a committee of the Dealers' Association, composed of Chairman John H. Johnson, President John MacAlman of the association, Secretary Chester Campbell of the association and Joseph Donovan. Over 30,000 invitations were sent out to New England dealers and motorists and the dealers expended approximately $50,000 in advertising the event in the daily press and otherwise. Many of the exhibitors used elaborate decorations in their show rooms, consisting of special settings with unusual illuminating effects, while on the exterior practically every dealer had the front of his building festooned with flags and the national colors. Dealers kept open until 10 o'clock evenings to receive the out-of-town people who were unable to get into Boston during the day.

At the meeting of the dealers held during the week to discuss the advisability of making the "Closed Car Show" an annual event, it was agreed to continue it and Secretary Campbell suggested that Symphony Hall be secured for a week and that the dealers all display one model of their enclosed line. Each exhibit would have a poster showing the full line and the dealer would have a car outside the hall to take prospects to the show rooms to see the other models, under Mr. Campbell's plan.

Other ideas for next year's show were advanced and they will receive consideration from time to time at the meetings, with the object of developing the most successful plans. While sales were not large during the week, it was felt that the show had served its primary purpose of educating the motorist to the value of the enclosed car type for winter use. As strange as it may seem there are in the neighborhood of 4,000,000 car owners in the country, but only a surprising few of this number avail themselves of the advantages of the closed car and the joys of all-year motoring.

A. H. Sowers, treasurer and manager of the Jackson Motor Car Co., distributors of Jackson cars in New England, expressed a sentiment that was quite general, when in speaking of the show, said:

"We are very well satisfied at the results from 'Closed Car Week.' True, we did not get a whole lot of orders, but we had a chance to interest a number of people in the new Jackson Eight Sedan, which is just being introduced.

"If the show were not held the talk about closed models would have had to be individualized by the dealers, which would not be as effective as when it is done collectively. It got people talking about cars first; then about closed cars.

"Ordinarily the Boston people begin to think of closed models when Thanksgiving is in sight, or when they are figuring on going to the Harvard-Yale football game, and a lot of others wait until show time. As the show is in March they consider a closed car only for the following season.

"Therefore, we have awakened them and got them started toward getting closed cars for this season. They had a chance to look the cars over months before show time."

The exhibits of the dealers in every case included a full line of closed cars where it was possible to obtain them. Some dealers were disappointed in being unable to obtain shipments and were enabled to exhibit one or two cars only by having them shipped from the factories by express. A number of the dealers showed special jobs, which attracted widespread attention, while others had special scenic settings in their windows and stores, depicting winter scenes and an appropriate environment for the closed car.

### CHRISTIAN GIRL ORGANIZES STAFF.

Christian Girl, director of truck production in the quartermaster corps of the army, is organizing a staff of experts to aid in the work. Most of the men so far selected are from the motor industry and were appointed upon recommendation of their employers. Mr. Girl's headquarters are located at 1421 I street, N. W., Washington. His staff to date consists of the following: Superintendent of inspection, J. G. Utz; supervisor of raw material, Walter S. Quinlan; supervisor of parts plants, P. W. Tracy; assistant supervisor of parts plants, John M. McIntosh; plant surveyor, Guy Morgan; supervisor of charts and distribution, Arthur G. Drefs; supervisor of assembly plants, James F. Bourquin; assistant supervisor of charts and distribution, Stanley H. Wardwell.

### AKRON AUTOMOBILE SHOW DECEMBER 3D TO 8TH.

The Akron Auto Show Association will hold its annual automobile show in the new Auditorium Armory in that city from Dec. 3 to 8 inclusive. The exhibits will include passenger cars, motor trucks, motorcycles and accessories of all kinds. Reservations for space at the show are now being made. The show is under the management of C. G. Armstrong, 229 Medford building, Akron, O.

### CUTLER MADE CHIEF OF FOREIGN COMMERCE BUREAU.

The appointment of Burwell S. Cutler of Buffalo as chief of the Bureau of Foreign and Domestic Commerce of the Department of Commerce, was confirmed recently by the Senate. Mr. Cutler came into the bureau six months ago and has been acting as chief since the resignation of Dr. E. E. Pratt.

### JACKSON'S MIDNIGHT TRIP INTO WHITE MOUNTAINS.

Guests at the Mt. Washington Hotel, in the White Mountains, received an agreeable surprise one Sunday this month when they found the Boston Sunday papers at the breakfast table, as usually they are obliged to wait until 1 o'clock in the afternoon to receive the news from the outside world.

A. H. Sowers, the New England distributor of the Jackson car, carried out the surprise for the hotel's guests, driving one of his new 1918 models from Boston to Mt. Washington, a distance of 170 miles, through rain and fog in about six hours. He left Boston shortly before 2 o'clock in the morning after visiting the various newspaper offices and procuring a liberal supply of Sunday papers. On the return trip the car was driven back via the Merrimac Valley route, and upon reaching Boston the speedometer indicated nearly 400 miles, which had been covered on an average gasoline consumption of 17 miles to the gallon.

### G. W. HOUK, WIRE WHEEL MANUFACTURER, IS DEAD.

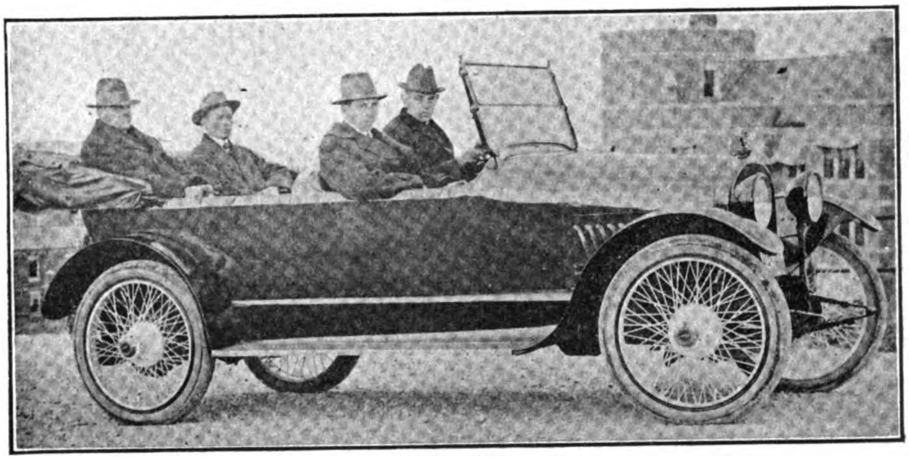
George W. Houk, manufacturer of wire wheels for motor cars, and founder of that business in this country, died in Hollywood, Cal., on Oct. 5. His death was caused by a second attack of paralysis.

Mr. Houk started his career in the old bicycle days and was sales manager of the Eclipse Manufacturing Co. Later he went to England and organized the Green-Houk, Ltd., Co. He is said to have amassed a fortune in this business, but later met with reverses.

About five years ago he returned to this country with the manufacturing rights for the Rudge-Whitworth wire wheel and made arrangements with the Standard Roller Bearing Co. of Philadelphia for its manufacture. He later severed his connection with the Standard company and founded a company for the manufacture of Houk wire wheels at Buffalo, N. Y. He sold his interests in the company for over a million dollars to the Wire Wheel Corporation of America. He was on a visit to his ranch in Southern California when first stricken.

### "RULES OF THE ROAD" IN NEAT BOOKLET.

The Greer College of Motoring, 1519 Wabash avenue, Chicago, Ill., have issued a neat little booklet entitled "Rules of the Road," which contains the essential information for motorists to observe the laws of Illinois and ordinances of the city of Chicago, regulating the operation of a motor car. The points covered apply also in practically all states and are of interest to car drivers everywhere. The booklet will be mailed free upon application to the school.



**A. H. Sowers, New England Distributor of the Jackson Car, Driving the New Eight on Top of Mt. Washington After All Night Drive in Storm from Boston.**

# *No Time to Knock Car Industry*

## Paige President Points Out the Place the Automobile Occupies as Universal Utility

Harry M. Jewett, president of the Paige-Detroit Motor Car Co., says the war has centred attention on the automobile for two different reasons and from two totally different angles. President Jewett's remarks, while addressed more to the public than to dealers, has particular pith and point for the latter in the construction of their selling talks and in the fight they have ahead of them with munitions lines of business and others that do not appreciate all that depends on transportation and lighter traffic at this time. Military men and laymen to some extent, if they have followed the great conflict closely, have observed what a vital part the motorized vehicle is playing in the struggle abroad. The motor car has been given credit and this fact, although not completely realized and appreciated, is no longer news.

But since we have had to consider finances in relation to the war and ways and means for raising or saving money, certain people have turned the spotlight on the motor car from a different angle—a false angle. Lacking information or superficial in their reasoning, they have questioned the motor car as a commodity necessary for our daily affairs at this time.

These false reasoners have even suggested that the automobile is a luxury and can be spared; that it would be well for the country at this time if its manufacture were curtailed and the money involved in making it, buying it and operating it were turned into more useful channels.

Such peculiar reasoning shows how little these false economists understand the place the automobile now occupies. It was from the very first a utility and as great a necessity as the telephone. The fact that 63 per cent. of all cars manufactured go to farms throws some light on the matter, for if the automobile were a 'pleasure car' the farmers would not be taking such a huge proportion of the output.

Overlook for the moment what the industry means in the way of invested capital and the employment of labor and just consider how your own friends use their cars. I venture to say you will discover that almost every man you know who drives a car uses it about nine-tenths of the time for business or utilitarian purposes.

The salesman, the contractor, the builder, the plumber, the doctor, the collector and men in a thousand and one occupations use their cars for business, for errands and utilitarian purposes, while the banker, if you told him his car was merely a luxury would reply that it carries him back and forth from business, is used for shopping by his family and runs all the household errands.

Statistics are not needed to prove the utility of the motor car. Just a little straight thinking shows up the fallacy of the argument that the industry could be spared or curtailed at this time. On the contrary, to force it to put on artificial brakes would be dealing a staggering blow to the country that would shake it to its very foundations.

### GOVERNMENT GETS FORD'S BOSTON ASSEMBLY PLANT.

When the smoke of the melee precipitated by Henry Ford's offer of his big assembly plant at Cambridge to the government cleared away, the plant is at the disposal of the government and will be used for war purposes.

After Mr. Ford had first telegraphed his offer, Mayor Rockwood of Cambridge immediately went to Washington and protested to the War Department that its aceptance of the offer would throw the 200 odd Cambridge citizens who worked in the plant out of employment. Mr. Ford promised work to all these men.

# NO TURNING OF CUSTOMERS AWAY

## Used Car System Adopted by Dealer in Valley Town Off the Beaten Track a Pointer of Modern Business

MR. DEALER, do you turn away one customer a day who comes to your place to buy a used car?

If so, you are piling up over 300 points a year toward the prospect of sending an accumulating used car stock to the auction block, or carrying it in storage, at a positive loss. This is the road to uncertain and possibly large sacrifices, whereas quick sale methods at a smaller margin recommend themselves to many dealers as a positive working plant to avoid loss on a particular class of stock such as the traded in car.

A dealer not far from Boston has a habit of meeting an intending purchaser with recessions from the marked price on his used cars to such an extent that it cuts down to a minimum the departure of a patron without taking the goods away with him. If this dealer has a used car on hand on which he has set for himself a profit of $50, for instance, he will not refuse a tender from a person who looks at it at a lower price. He will even let a car go that nets him $10 instead of the $50 he had decided upon. From several years of this policy he has learned that it pays to make a quick turnover on goods on hand, and especially so in the case of the resale of a car.

No dealer bases his general business progress or his full measure of profits on the resale of cars. Too often it is the case that insufficient attention is paid to this end of the business and that the accumulation of odds and ends assumes proportions which threaten to overshadow the regular line. It certainly will if such stock is allowed to drag. The surest preventive against accumulations is to move the stock by applied sound business methods of the modern era.

The way of the small dealer previously mentioned is to let the customers come to him. Off the beaten track, in a side valley, he keeps going season after season, and the reputation of his car bargains extends far beyond the confines of the valley neighborhood, and in fact of the state. Buyers come to his shop from scores and hundreds of miles. What is this but advertising? Undoubtedly it is to be classified as advertising of the finest sort.

Applied to a denser community or to a business on a larger scale the import is that through well placed advertising the same effect is to be gained. Much has been said in the journal from time to time of the importance of placing cars in the best of mechanical condition, as well as the importance of proper display of the wares, the maintenance of a clean shop as primary steps in the reduction of a prejudice against used cars.

Used car buying tends to get away from the hands of professional traders with every time the local dealer takes the grip on the question that is needed. One very important thing is as far as possible to move the stock himself.

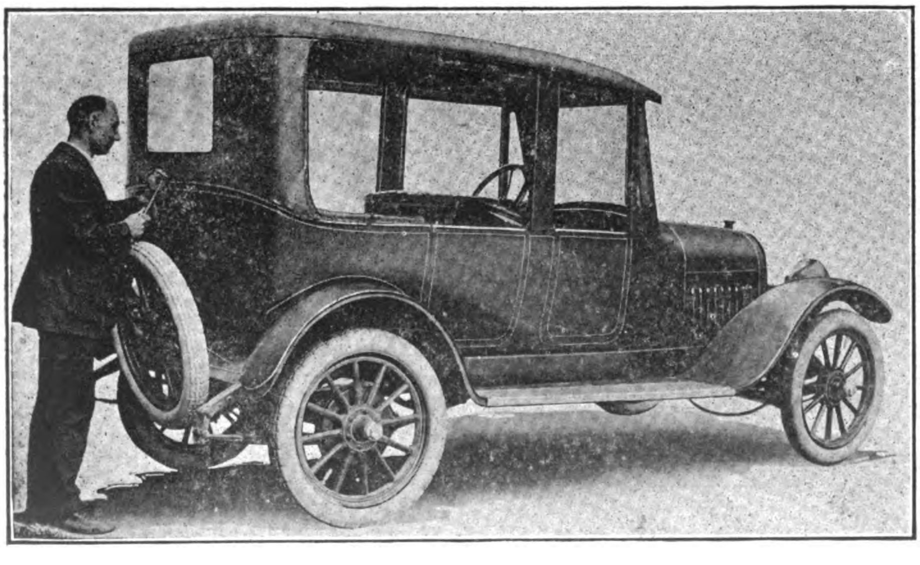
The central or cooperative clearing house is not available to every section, perhaps, although it may be increasingly so. Nevertheless, there are methods available that the progressive, wide-awake dealer does not have to go out of his own shop to grasp. The adoption of quick, live sales reduces the number of customers turned away. They spell the difference between a profit, modest or low as it may be, and a positive loss by the auction block route.

### DETROIT WEATHERPROOF TOP WINTER BUSINESS.

With the coming of winter the motorist is inclined to think of fittings for enabling him to utilize his car during the cold weather. A product which is attracting considerable attention is the Detroit Weatherproof Top, made by the Detroit Weatherproof Body Co. of Pontiac, Mich., for application to the Ford, Buick, Chandler, Chalmers, Hudson, Maxwell or Overland cars.

Windows and sash are special features in construction and service in this top. Windows are cemented into place by means of a black gum, which penetrates to every crevice and keeps the glass from squeaking or rattling. The sash, which is of steel, is carefully tested before being shipped and is guaranteed to run smooth without sticking.

All of the tops are made to order of the best material and carefully finished by hand work, then knocked down and crated with an assembly chart, which is marked to correspond with the various parts.



**Final Operation in the Process of Mounting a Detroit Weatherproof Top on a Maxwell Car Body.**

### C. F. REDDEN DECIDES TO MARKET FARM TRACTORS.

C. F. Redden, the president and founder of the Redden Motor Truck Co., has resigned from the presidency of the company and disposed of his interests. He has become interested in a popular priced farm tractor and will devote his entire time to the development of a sales organization to market it. He has not announced the name of the tractor or details of its construction, but it is understood that the machine has many exclusive features. A big sales and advertising campaign is being planned to launch it on the market.

### EXPANDING TERRITORY ON QUALITY TIRE PRODUCTS.

The Quality Tire and Rubber Co., 1467 Michigan avenue, Chicago, makers of the Quality tires and tubes in non-skid and super cord types, is enjoying a big demand for its products, which have already established a reputation on account of their exceedingly low price as compared to the high quality.

Gordon Ingalls, president of the company, announces that the sales territory will be expanded with the advertising campaign that will soon be inaugurated.

### NON-MEMBERS INDORSE ACCESSORY JOBBERS.

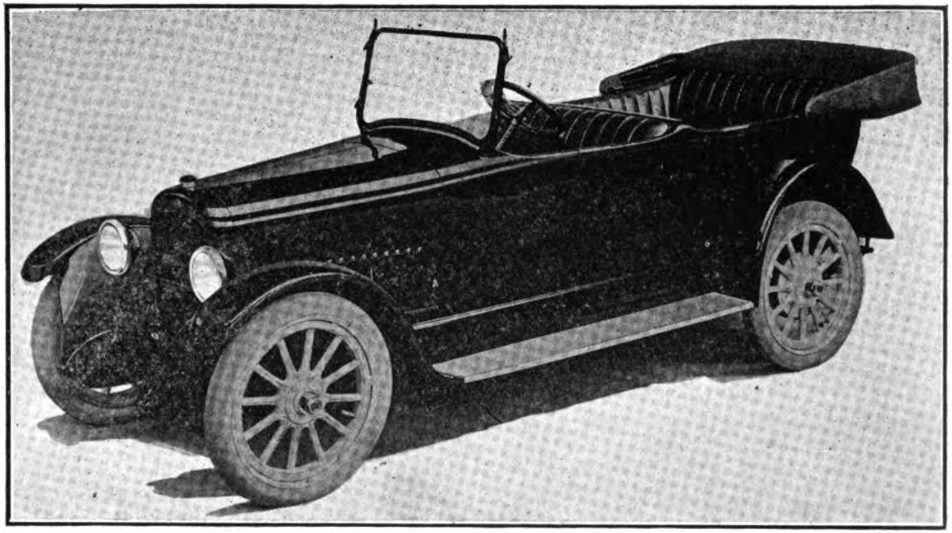
Commissioner W. W. Webster of the National Association of Automobile Accessory Jobbers, has received a number of letters from members and non-members indorsing the organization and its stand in its present litigation. Some of the firms have extended unsolicited financial aid, while others request that they be called upon for any assistance that is necessary, in defending the members under indictment.

### L. P. JONES PROMOTED.

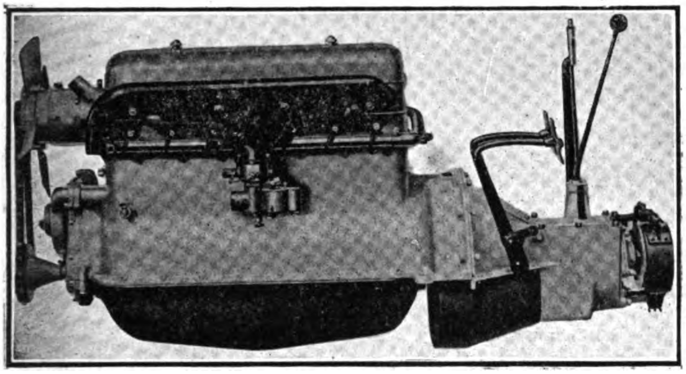
Lloyd P. Jones, formerly sales manager of the Federal Brass Works, Detroit, Mich., has been elected vice president and general manager of the company.

# *Nash Discloses Six-Cylinder Model*

**The Nash Motors Co., Kenosha, Wis., recently announced the Nash Six, their latest product, an entirely new six-cylinder model equipped with an overhead valve engine developed in their shops. With the announcement of this new model the name Jeffery is discontinued. The Jeffery Six, styled Nash, is to be continued, but the four-cylinder model is dropped. The older six has a seven-passenger body. Three body styles are provided with the new chassis. Full technical description in the Automobile Journal, Oct. 10, 1917.**



Nash Six-Cylinder, Five-Passenger Touring Car.



Compact New Engine Produced for Nash Six.

### NASH SIX SPECIFICATIONS.

| | |
|---|---|
| Engine | Nash |
| Cylinders | Six, cast in block |
| Bore | 3¼ inches |
| Stroke | 5 inches |
| Valves | In the head |
| Horsepower (S. A. E.) | 25.3 |
| Ignition | Delco |
| Starting and Lighting | Delco |
| Clutch | Dry plate |
| Gearset | Three speed |
| Wheelbase | 121 and 127 inches |
| Wheels | Wood |
| Tires | 34x4 |
| Rear axle | Semi-floating |

Prices: Touring, $1295; Springfield Sedan, $1985.

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# NEW CONCERNS RECENTLY INCORPORATED.

## Monthly Record of New Business Houses for which Charters Have Been Issued In the Various States and Classified According To Nature of Business.

**Dover, Del.;** The Electric Auto Lite Corp.; $1,300,000; to deal in and manufacture engines.

**Dover, Del.;** The National Tractor Co.; $2,500,000.

**Wilmington, Del.;** Magnetic Motors Car Co.; $3,000,000; to build automobiles.

**Wilmington, Del.;** Santa Fe Motor Car Co.; $1,000,000; to manufacture automobiles and to conduct an agency for the sale of same.

**Chicago, Ill.;** The Century Auto Cycle Co.; $150,000; Mard D. Goodwin, David A. Peps, Samuel C. Horwits.

**Oak Park, Ill.;** Maple Automobile Sales Co.; $2400; to sell automobiles; Edward R. Watson, Charles Fosha, Edward C. Fosha.

**Peoria, Ill.;** Bradfield Sales Co.; $25,000; to manufacture and sell motor vehicles and parts for same.

**Indianapolis, Ind.;** Boulevard Tire and Supply Stores; $2500; to rebuild and repair automobiles and their parts.

**Davenport, Ia.;** The American Motor Sales Co.; $10,000; to engage in the business of manufacturing, buying and selling motors, motor trucks, second hand automobiles and accessories; John B. Voss, C. C. Breeck, Gilbert E. Porter.

**Des Moines, Ia.;** The Haynes-Lagerquist Automobile Co., $25,000; Henry Lagerquist, Frank V. Dole, H. M. Townsend, R. R. Lagerquist.

**St. Joseph, Mo.;** Lawler Motor Co.; $10,000; to deal in automobiles and automobile supplies; Michael P. Lawler, Barney E. Reilly, Adeline Lawler.

**Webster Grove, St. Louis County, Mo.;** Krause Motor Corp.; $15,000; to sell, buy automobiles, trucks and vehicles of all kinds; E. J. Krause, Jr., Walter E. Tator, James Duncan.

**Newark, N. J.;** Oxford Truck Manufacturing Co.; $125,000; to manufacture all kinds of trucks and vehicles; B. Raunser, William W. Schofield, George W. Nuse.

**Dover, N. Y.;** The Quality Tire Shop Co.; $25,000; to manufacture and sell automobiles.

**New York, N. Y.;** Armstrong Rubber Co., Inc.; $35,000; to manufacture automobiles, motor trucks; S. Newman, A. L. Gilman, R. C. Schaeffer.

**New York, N. Y.;** Campbell Motor Co.; $3,000,000; to make automobiles and wagons; S. B. Howard, L. H. Guather, F. J. Curtin.

**Fulton, N. Y.;** The Viking Corporation; $60,000; to manufacture spark plugs, engines, machines and automobiles; H. H. Hunter, R. H. Allen, C. M. Allen.

**New York, N. Y.;** New York Mitchell Motor Co., Inc.; $100,000; to make automobiles, air planes and other vehicles; A. Foshy, A. G. Phaanum, R. Goldman.

**New York, N. Y.;** Taylors Motor Corporation; $100,000; to make automobiles and motor vehicles; J. Allison, E. H. Rodgers, H. R. Worthington.

### Dealers in Automobiles and Motor Trucks

**Wilmington, Del.;** Yost Auto Co.; $50,000; to buy and sell automobiles.

**Lynn, Mass.;** Stevens, Tolfree Co.; $10,000; to deal in automobiles; George E. Stevens, president and treasurer; Nathan M. Doen, clerk.

**Hattiesburg, Miss.;** Forrest Auto Co.; $5000; to deal in automobiles and accessories; to repair and construct automobiles; to conduct a garage and automobile service station; G. J. Hartwell, H. J. Kittrell, P. N. Kraus.

**Springfield, Mass.;** Oak Street Motor Co.; $6000; Frank M. Lynch, Robert E. Whipple, Arthur E. Cooley.

**Kansas City, Mo.;** Ad-A-Tire Co.; $10,000; to deal in second hand automobiles and motor vehicles; to repair and deal in parts and accessories; Joseph Steinberg, George Nowick, Max Hurst.

**Wibaux, Mont.;** Wibaux Machinery and Automobile Co.; $75,000; Fred Zoppi, W. O. Schuett, S. P. Pipe.

**Camden, N. J.;** Philadelphia Shippers, Inc.; $37,500; to operate motor trucks as private carriers of goods and merchandise.

**East Orange, N. J.;** Hardt & Brown Automobile Sales Co.; $125,000; to deal in automobiles; Egbert S. Brown, Charles W. Hart, Lily G. Hart.

**Englewood, N. J.;** Cadillac Co. of Englewood, Inc.; $25,000; to deal in automobiles; Robert M. Prophet, Robert M. Prophet, Jr., Norman P. Newhouse.

**Albany, N. Y.;** The Boulevard Warehouse Co., Inc.; $500; to store and deal in automobiles; Cornelius V. Collins, Frank Alderman, Edward R. Hoffman.

**Brooklyn, N. Y.;** Hohorst Haff, Inc.; $10,000; to deal in automobiles and accessories; Charles H. Hohorst, John B. Haff, Mary L. Haff.

**Danville, N. Y.;** The Danville Buick Garage, Inc.; $8000; to deal in automobiles and to conduct a garage business; J. C. Vandeventer, T. J. Carbery, F. R. Driesbach.

**New York, N. Y.;** The Auto Post Service; $100,000; to do a general advertising business; T. C. Connors, C. Nicolay, E. Vernon.

**New York, N. Y.;** H. and N. Manufacturing Corp.; $300,000; to deal in and with automobiles, trucks; W. Harrington de Fontaine, J. K. Dalton, D. D. Deutsch.

**New York, N. Y.;** Motor Car Maintenance Co. of New York; $5000; to deal in automobiles and to conduct a garage business; J. H. Bord, W. C. Clark, E. Beugnet.

**New York, N. Y.;** C. and S. Motors Corp.; $6000; to engage in an automobile and cab hiring business; I. M. Thursman, H. Sonn.

**New York, N. Y.;** Mirio Tapparelli Fu Pietro of America, Inc.; $50,000; to deal in automobiles, airplanes, machinery and foundry supplies; M. Tapparelli, C. F. Huass, W. Brewster.

**New York, N. Y.;** Mohawk Motor Co., Inc.; $150,000; to deal in automobiles; William L. Rigger, Norman E. MacLeod, William P. Carter.

**New York, N. Y.;** Rackin Brothers Auto Sales Corp.; $40,000; to deal in the automobile business; H. Raskin, J. Iglitzin, S. Iglitzin.

**New York, N. Y.;** Thirtieth Street Garage, Inc.; $5000; to deal in automobiles; I. A. Call, H. A. Pike, P. Massoni.

**New York, N. Y.;** Vico Supply Co., Inc.; $10,000; to deal in automobiles and accessories; W. H. Vidor, G. A. Paine, B. Brill.

**New York, N. Y.;** Wilson, Roberts & Monroe, Inc.; $100,000; to deal in automobiles, motors and engines; A. Foshay, A. G. Thaanum, A. Skillman.

**Canton, O;** American Motor Car Co.; $100,000; Clyde A. Volze, William E. Patterson, Adolph S. Vance, Jacob M. Glaser, Moritz Glaser.

**Norfolk, Va.;** Oldsmobile Co.; $10,000; to conduct an automobile business; president, H. G. Williams, Jr.; vice president, R. H. Bagby; secretary, Roland Brinkley.

**Richmond, Va.;** Kaehler Motor Co.; $100,000; to conduct an automobile business; president, Robert F. Kaehler; vice president, John E. Finney; secretary, Annie M. Dolan.

**Austin, Tex.;** Texas Truck and Body Co.; $10,000; C. Du Puy, C. B. Jackson, W. L. Roper.

**Gainesboro, Tenn.;** Draper-McCowley Co.; $2000; to engage in general automobile business; J. M. Draper, J L. McCowley, R. L. McDearmond, L. C. Quarles, B. L. Quarles.

## Accessories, Equipment and Supplies

**Wilmington, Del.;** Ten Brock Rubber Co.; $400,000; to make, sell and deal in rubber tires and tubes; F. D. Buck, M. L. Horty, K. E. Longfield.

**Wilmington, Del.;** United States Motor Truck Chain Corp.; $220,000; to manufacture a certain armor truck chain.

**Wilmington, Del.;** Vapor Heater Corp.; $1,000,000; to make oil, vapor, gas or electric heating devices of all kinds; C. L. Rimlinger, W. S. Randall, C. M. Enger.

**Detroit, Mich.;** Goodale Tire Co.; $1500; to deal in tires and repairs; Catherine M. Hayward, Jeane N. Goodale, Morris A. Hayward.

**Kansas City, Mo.;** Security Motor Co.; $50,000; to deal in motors of all kinds and motor machinery and supplies; F. C. Downey, Frank E. Wear, George Y. Thorpe.

**Springfield, Mo.;** U-Can-C Products Co.; $10,000; to manufacture and market a patent polish for the bodies of automobiles and motor vehicles; Guy S. Warren, G. E. Goodwin, John U. Field.

**Montclair, N. J.;** Wonder Seal Co., 483 Bloomfield avenue $75,000; to manufacture automobiles, supplies and accessories.

**Montclair, N. J.;** Wood-Seal Co.; $75,000; to make and deal in automobile supplies; W. A. Ash, A. C. Buen, M. S. Abner, Harry T. Watkins.

**New York, N. Y.;** Kor-Kor Sales Co., Inc.; $10,000; to sell automobile and motorcycle accessories; A. D. Stanton, R. Buggeln, H. C. Harris.

**Sioux Falls, N. D.;** The McCarthy Co.; $50,000; to handle automobile supplies; J. C. McCarthy, M. C. McCarthy, T. M. Railey.

**Akron, O.;** The Avalon Rubber Manufacturing Co.; $50,000; to manufacture rubber articles; T. S. Briggles, L. B. Turner, William W. Spears, J. F. Hower, G. H. Laumann.

**Philadelphia, Pa.;** W. G. Krussman Co.; $10,000; to manufacture supplies; Edward G. Cook, Edgar Laker, Wilhelmina C. Krussman.

**Philadelphia, Pa.;** The Security Tire and Manufacturing Co.; $2,000,000; A. M. Haloran, S. A. William, M. H. Morris.

## Garages and Repair Shops Newly Chartered.

**Battle Ground, Ind.;** Johnson Brothers' Co.; $15,000; to operate a garage and to sell automobiles; Chester Johnson, Estella W. Johnson, Frank M. Biddle.

**Noblesville, Ind.;** Pearce Garage; $3000; to conduct a garage business; Charles Pearce, John J. Dimmich, Clarence R. Dimmich.

**Clovis, N. M.;** Quick Service Garage; $8000; Leander King, R. R. Bridges, B. H. Oxford.

**Okmulgee, Okla.;** Travelers' Garage; $5000; A. H. Philbrook, Bessie L. Philbrok, F. H. Cott.

**Chicago, Ill.;** East End Garage; $5000; to conduct a garage; William Herelay, Arthur A. Lewisohn, Sol Lewisohn.

**Decatur, Ill.;** Commonwealth Garage Co.; $2500; to engage in the garage business; S. Stilson Kalmerton, H. S. Kalmerton, B. F. Darneille.

**Scobey, Mont.;** Davis & Shock Co.; $20,000; to conduct a garage; W. B. Davis, E. M. Davis, Harry Shook.

**Omaha, Neb.;** American Racing Tread Co.; $25,000; to conduct a garage; W. B. Davis, E. M. Davis, Harry Shook.

**Brooklyn, N. Y.;** Clifton Garage, Inc.; $1000; Edward J. Reid, Robert F. Raymond, Henry B. Ketcham.

**Brooklyn, N. Y.;** The De Kalb Garage Co., Inc.; $5000; to engage in the garage business; David Goldstein, Lena Goldstein, Nathan Weinstein.

**Hastings-On-Hudson, N. Y.;** Devine's Garage, Inc.; $10,000; to conduct an auto garage business; J. A., R. M. and J. P. Devine.

**New York, N. Y.;** Cruice & Finnerty Garage, Inc.; $1000; to conduct a sales garage; Richard J. Cruice, Andrew J. Finnerty, William T. Little.

**New York, N. Y.;** Mardie Motor Co., Inc.; $175,000; to conduct a general automobile business; W. L. Rigger, N. E. MacLeod, W. P. Carter.

**New York, N. Y.;** W. G. Corporation; $1000; to operate a garage business; Morris Workin, Isaac Workin.

**Perth Amboy, N. Y.;** Liberty Garage Co.; 173 Smith street; $25,000; to conduct a garage business and deal in automobiles.

**Rochester, N. Y.;** Judge Motor Corp.; $8000; to conduct a garage; J. J. Judge, H. F. Marks, B. K. Peer.

**Savville, N. Y.;** R. K. Fendall, Inc.; $30,000; to build and repair auto bodies; P. Grady, H. B. and R. K. Fendall.

## Parts and Fittings Makers Incorporated.

**Ft. Smith, Ark.;** The Creekmore Motor Co.; $10,000; E. F. Creekmore, S. W. Creekmore, Milton A. Hellmon.

**Harrison, Ark.;** The Turn Right Headlight Co.; $100,000; to manufacture headlights for automobiles; George Henkle, A. R. Baker, J. C. Medley.

**Dover, Del.;** Cook Gearshift Co.; $1,000,000; to make gear shifting devices for gas engines; A. Murphy, J. R. Kearns, M. Hillis.

**Dover, Del.;** The Wilbur Manufacturing Co., Inc.; $200,000; to make attachments for internal combustion engines; G. Grant Wilbur, J. Duke, B. Wright.

**Wilmington, Del.;** Atlantic Auto Radiator Co.; $50,000; to manufacture auto parts and accessories.

**Wilmington, Del.;** Ketch Theef Co.; $100,000; to manufacture automobile warning devices.

**Wilmington, Del.;** Motor Efficiency Corp.; $300,000; to manufacture and sell carburetors and heating appliances for automobiles.

**Wilmington, Del.;** The Motors Specialty Corp.; $150,000; to manufacture carburetors and starters; Richard James, S. J. Blumenthal.

**Wilmington, Del.;** Trailer Truck Co., Inc.; $1,000,000; to build and deal in attachments for converting automobiles.

**Peoria, Ill.;** Bradfield Sales Co.; $25,000; to manufacture and sell automobile parts; J. S. Bradfield, C. T. Bradfield, H. S. Bradfield.

**Richmond, Ind.;** Jenkins Vulcan Spring Co.; $500,000; to manufacture automobile springs; Thomas B. Jenkins, Edwin Schiele, Robert G. Zetrouer, John M. Lontz, George E. Seidel, Samuel E. Swayne.

**Sioux City, Ia.;** Tri-State Battery Co.; $10,000; O. B. Cade, James E. Reeder, C. M. Newkirk.

**Claiborne, La.;** The Claiborne Motor Co.; $5000; J. W. Meniffe, J. Y. Allen, W. A. McKenzie.

**Portland, Me.;** Air Device Co.; $175,000; to manufacture and deal in machines and automobile parts; president, A. B. Farnham; F. B. Drew, clerk, T. L. Croteau.

**Portland, Me.;** Universal Axle Co.; $250,000; to manufacture and deal in axles, gears, motors and machinery.

**Boston, Mass;** Frank P. Anthony Motor Sales Co.; $25,000; president, Frank P. Anthony; treasurer, James H. Smith; clerk, Agnes H. Sweeney.

**Woodcliff, N. J.;** Willis Bumper Co., 958 Broadway; $10,000; to manufacture bumpers for automobiles.

**Buffalo, N. Y.;** The Buffalo Truck and Tractor Corp.; $150,000; to handle the patents on the combination truck, power plant and utility automobiles; E. H. Oversmith, G. B. Burd, S. B. Simpkins.

**Auburn, N. Y.;** Auburn Motors, Inc.; $10,000; Frank L. Durbin, John H. Walrath, James K. Bust.

**New York, N. Y.;** Improved Motor Securities Co., Inc.; $20,000; to make internal combustion engines; V. H. Hansen, D. C. Conkling, H. Ferrari.

**New York, N. Y.;** Lazear-Allen Corp.; $10,000; to make motors, engines, cabs and other vehicles; E. W. Leclear, R. F. Allen, E. Hass.

**New York, N. Y.;** Pacco Vaporizer Corp.; $10,000; to make vaporizers for automobiles; P. A. Coon, M. Pruden, F. F. Pearz.

**New York, N. Y.;** Yorkville Motor Co., Inc.; $15,000; to make motor engines; M. Kinsburg, W. Spiess, R. Getzler.

**Oklahoma City, Okla.;** The Van Noy Motor Co.; $25,000; J. Van Noy, F. B. Payne, F. L. Chiles.

**Dallas, Tex.;** Rick Truck Attachment Sales Co.; $1000; A. C. Rick, M. M. Toole, C. C. Latimer.

# NEW BUSINESS CONCERNS AND CHANGES OF NAMES.

## RECENT TRANSFERS OF BUSINESS OWNERSHIPS.

**Lemore, Cal.;** Heuy & Hubbard has leased the LeMoore Garage of Bertha Bauer.

**Whittier, Cal.;** Davis & Hening Motor Car Co. have taken over the garage at 409 W. Philadelphia street.

**Tampa, Fla.;** The Cadillac Sales Corp. has changed its name to the Ferman Motor Car Co., Inc.

**Folkston, Ga.;** J. C. Wright has purchased the Thomas Garage.

**Ames, Ia.;** J. G. Trent is successor to Lincoln Way Garage.

**Bear Grove, Ia.;** Edward Kelley has purchased the Bear Grove store and will carry a full line of accessories in addition to giving service on automobiles.

**Burlington, Ia.;** Fred Richter has purchased the repair garage formerly owned by Arthur Hansen.

**Danbury, Ia.;** J. R. Crombie has purchased the Cleveland Garage at Storm Lake.

**Des Moines, Ia.;** Ed. Crawford is the new owner of the Odea Garage on East Grand avenue.

**Marshalltown, Ia.;** Sam S. Hanson has purchased the Boardman packing plant building on Lynn street and is planning to erect a large automobile garage on the site.

**Oxford, Ia.;** J. L. Kinney has taken over the garage of Kinney & Shebetka.

**Spencer, Ia.;** The Holmes Motor Co. has purchased the accessory business of Fichel & Buchnan and has added the local dealership for Ford cars.

**Abingdon, Ill.;** The Charles B. Steele Garage is now under the new ownership of Wilbur Rork and Claude Ross.

**Dana, Ill.;** Kinsey Brothers have sold their interest in the Dana Garage to J. F. Welch and R. R. Monthel.

**Evanston, Ill.;** R. D. Cunningham, 1629 Orington avenue, is successor to Ford Motor Sales Co.

**Augusta, Kan.;** Gilbert Johnson has purchased the Vacuum Tire Service Co.

**Augusta, Kan.;** O. H. Reed has purchased the South End Garage, formerly owned by C. W. Meredyth & Sons.

**Belle Plaine, Kan.;** Nessely Garage is occupying the Old City Garage on Merchant street.

**Canton, Kan.;** Johnson & Armour has rented the Doble building and will occupy the same when an addition is built to it.

**Eureka, Kan.;** The Mileham Motor Co. has purchased R. R. Smith's garage.

**Independence, Kan.;** Phares Root has purchased the Vincell Co. The interior of the garage is being remodeled.

**Lenora, Kan.;** The E. & H. Garage, formerly owned by Kessler Brothers, is now owned by Pearl Eagleburger.

**Bay City, Mich.;** J. P. Beck & Son, distributors of Packard motor cars and trucks, have reorganized and will be known as the Beck-Foss Co.

**Charlotte, Mich.;** Phillips Garage have taken over the garage of Thompson & Phillips.

**Grand Rapids, Mich.;** Price J. Wilson has purchased the Reo agency and service station on East Lawrence avenue, formerly owned by George Shaull.

**Hader, Minn.;** Christ Nygaard has sold his share in Nygaard & Hommedal, automobiles, to his partner.

**Little Falls, Minn.;** E. A. Berg & Co. have taken over the busness of C. C. Lisle and will establish a Ford service station in the Wilson building.

**Montevideo, Minn.;** The Ford business, formerly owned by J. A. Olson, has been purchased by W. M. Falkenhagen.

**Broken Bow, Neb.;** McCandless & Thompson have dissolved partnership.

**Marietta, Okla.;** T. M. Randolph is successor to Wood & Smart in the Marietta Auto Co.

**Meeker, Okla.;** C. A. Stone is successor to Fuller Garage.

**Pittsburgh, Pa.;** Edgar A. Meyers has purchased the automobile business of G. Martin & Son at 3923 Forbes street.

**Burlington, Wis.;** Fluck Motor Co. have taken over the Ford agency and will occupy the Gill building.

## AGENCIES, DEALERS AND SERVICE STATIONS.

**Los Angeles, Cal.;** H. E. Hawkins has opened a wrecking establishment and used parts store at 2516 South Main street.

**Crawfordsville, Ga.;** The Taliaferro Auto Co. has opened with a full line of Ford accessories and parts.

**Springfield, Ill.;** J. B. Harris is opening a spacious new sales room and tire house at 315-317 Washington street. The old quarters at 116-118 Washington street will be used as a service station only.

**Dubuque, Ia.;** The Studebaker Corporation has opened a branch at 30 South Main street, with Ross B. Henwood as manager.

**Beloit, Kan.;** The Home Electric Co., which is located in the Gladow building, has been appointed to give service on Willard storage batteries.

**Concordia, Kan.;** O. D. Gauchier has taken the agency for the Oakland automobile.

**New Bedford, Mass.;** The Auto Electric Service Station, 772 Pleasant street, has added Willard storage batteries to its line and will give service on same.

**Detroit, Mich.;** The Telotte Buick Sales Co., 621 Woodward avenue, has opened for business. The company has the agency for Buick cars.

**Cedar Springs, Mich.;** E. B. Thruston has taken the Ford agency and has leased the Cedar Springs Garage and will occupy it until the service station is erected.

**Wilmar, Minn.;** The Handy-Lewis Motor Co. has added Willard storage batteries to its line and will give service on them.

**St. Louis, Mo.;** F. R. Rhode, 4133 Olive street, is agent for Corcoran radiators for Ford cars.

**Charlotte, N. C.;** The Carolina Storage Battery Co. has been appointed the official Willard service for Charlotte and adjoining territory. The company headquarters are at 324 North Tyron street.

**Greensburg, Pa.;** John W. Patton, 124 E. Pittsburgh street, has been appointed to give service on Prest-O-Lite batteries.

**Philadelphia, Pa.;** The Samuel Earley Motor Co. has completed its new home at 669 North Broad street. The company handles National cars and has also added the Mercer to its line.

**Tacoma, Wash.;** J. W. Capek & Co., Ford dealers, have been appointed distributors of Goodyear solid truck tires.

## NEW BUSINESS LOCATIONS AND REMOVALS.

**Everett, Cal.;** Hainsworth Motor Co. has moved from its temporary quarters at 2816 Rucker avenue to 2802 Wetmore avenue. L. C. Mohrinway is the manager. The company distributes the Oldsmobile.

**Valdosta, Ga.;** The Valdosta Garage Co. has moved from West Hill avenue to the corner of West Central avenue and Toombs street, where a modern building has been erected.

**Bloomington, Ill.;** Jerome Baldwin has moved into his new garage on the corner of Main and Third streets.

**Des Moines, Ia.;** Stearns Sales Co. has moved to new quarters, 1104 Locust street.

**Oskaloosa, Ia.;** The Walton Auto Co., local distributor of Overland cars, has moved to the Clark & Henderson building.

**Alton, Kan.;** Gaddos & Magnus have moved their garage into large quarters and will give both night and day service

**Concordia, Kan.;** The Universal Car Co. is now settled in its new quarters at Sixth and State streets.

**Eldorado, Kan.;** Brandon & Dillenback, agents for the Dodge, Marmon and Haynes, have moved to their new location on North Main street.

**Junction City, Kan.;** Sylvester & North have moved their repair shop and garage to 216 West Seventh street.

**Coldwater, Mich.;** Art Root has moved his vulcanizing equipment and business to East Chicago street.

**Saginaw, Mich.;** Central Michigan Auto Sales Co. has moved its sales rooms from the corner of Genesee and Warren to Nickodemus block, 702 Genesee. He is local agent for Studebaker automobiles.

**Kansas City, Mo.;** Babst Motor Co. has moved into its new home at 3109-11 Gillham road from 3309-11 Troost avenue. The building is two stories high, in which it conducts a sales and service station.

**Kansas City, Mo.;** Sam F. Baker has moved into his new building at 3338 Main street. He will have a strictly sales and service station.

**Kansas City, Mo.;** Manning-Martin Motor Co. is now located in the Firestone building.

**Omaha, Neb.;** United States Supply Co. has moved into its new location at 606-12 South 14th street.

**Lorain, O.;** The Lorain-Mitchell Co., local distributor of Mitchell and Dort cars and Republic trucks, has moved to its new quarters at 149 E. Erie avenue.

**El Paso, Tex.;** E. H. Fletcher has moved to his new location at 608 Mesa avenue. He is the Oldsmobile agent.

**Mt. Vernon, Wash.;** Wyman & Hayes, Overland distributors, have recently moved to new quarters on Second street.

**Spokane, Wash.;** Fisk Rubber Co. has moved to a new service station at Second and Monroe street.

**Tacoma, Wash.;** Little & Kenny will soon be located in their new building at 712 Broadway.

**Tacoma, Wash.;** Tacoma Battery Co. has moved from the Motor building to 739-741 Broadway, where considerable new equipment has been installed. J. H. McKee is the proprietor.

## FACTORIES, GARAGES AND REPAIR SHOPS.

**Escanaba, Mich.;** Frank Johnson has opened a new garage at Maple Ridge and will distribute Oakland and Buick cars.

**Flint, Mich.;** Kesz & Cook has opened a garage and repair shop.

**St. Louis Mo.;** S. G. Hoffman has opened a repair branch at 2600 Locust street.

**Fargo, N. D.;** Harry Krieg and Benjamin Morris have opened a garage at 530 Sixth avenue to be known as the Motor Inn.

**Toledo, O.;** Charley Getz and Charley Welker have opened a garage at 2140 Horton street, near Bancroft, and will operate under the name of Charley's Garage.

**Portland, Ore.;** The Bearings Service Co. has opened a branch at 24 Broadway with R. H. Cross as manager. The local station will carry complete stocks of ball, taper roller and flexible roller bearings for automobiles, motor trucks, farm tractors and motorcycles.

**Portland, Ore.;** Goodsell & Pilchard will occupy a new two-story garage to be erected at 12th and Stark streets.

**Portland, Ore.;** W. H. Wallingford has leased the garage at Sixth and Madison streets and will occupy it when it is remodeled.

**Connellsville, Pa.;** Bieber & Oppman have opened a garage on South Arch street.

# When Clerk or Salesman Misrepresents the Goods Sold for You

How shall an employer with agents, salesmen and other representatives, protect himself from trouble occurring through inadvertent, ill-advised, improper, untrue and even fraudulent representations and statements made by employees, say about the employer's goods? These statements go wrong and the customer of course always blames the employer for having such salesmen. And sometimes the customer begins suit, again always against the employer.

These questions are brought up by the following letter:

> Trenton, N. J.
>
> We have had in our employ a salesman named ————. His services proved unsatisfactory through his drinking, and last August we gave him a month's notice. He was very resentful and as we found afterward, did several spiteful tricks against us during the last month in our employ. One of these was to guarantee a lot of seconds tires which he was instructed to sell without a guarantee. We have not yet heard how many of these he sold with the guarantee of 3500 miles, but already 13 customers have come back for adjustments, claiming a guarantee from this salesman. At first we thought it bogus, but several of these buyers had witnesses to their guarantees, so we now believe that he guaranteed the tires in order to revenge himself on us. The tire was a cheap first which was sold for a low price and probably most of them will not run 3500 miles. We have held up the adjustments until we could see where we were at. Are we liable on the fraudulent act of this salesman? Naturally we wish to keep faith with the public, but in a case like this we may be swamped with adjustments which will cause us a heavy loss.
>
> E. N. C.

This is a splendidly typical illustration of what a dishonest, or malicious, or careless or ignorant salesman can do to his employer, for this correspondent is bound by his salesman's act without a doubt. A principal is responsible for the acts (this includes representations) of his agent, so long as the agent acts within the scope of his employment. "Scope of employment" means this: Jones is a salesman in a retail store. All he is there for is to sell goods. Suppose some day in a financial transaction which is none of his business, he calls somebody up and tells him that his employer will guarantee somebody's account. The employer would not be liable, because the clerk acted outside the scope of his employment, which was merely to sell goods.

But in the case submitted, and in almost every case where an employee makes untrue representations about merchandise, the employer is bound because the clerk or salesman is acting within the scope of his employment, which is to sell goods, and of course to make representations about them.

**ARE you in need of legal advice? Do you want first class professional service at no cost to yourself? If so, address a letter to Mr. Buckley, in care of the Legal Department of the Accessory and Garage Journal, detailing your troubles as clearly as possible. He will give immediate answer, either on this page, for the benefit of other subscribers who may have the same trouble, or direct by mail, as the inquirer specifies. The writer should sign his full name and address, but only initials or a pseudonym will be published in these columns. The service is free to subscribers to this magazine.**

That makes an employer almost at the mercy of his salesmen and clerks. Few employers, I think, fully realize that.

A clerk in a dry goods store mistakenly or carelessly guaranteed to several customers a large quantity of delicately dyed fabric; the guarantee was that the color would not change or run. The fact was that this was American dyed stuff and the clerk had expressly been told not to guarantee it. It was held here that the store was bound by the guarantee.

A wholesale jeweler sold a quantity of plated gold rings through a salesman who through a misunderstanding guaranteed them to be solid gold. A retailer who bought some of them, under the impression they were low karat gold, sold them as solid goods and got into a fierce newspaper scandal and all sorts of trouble. He sued the wholesaler, who tried to get out of it on the ground that the salesman had no authority to guarantee the rings to be solid. The court held this to be no defense; the salesman had acted within the scope of his employment and the employer was bound.

There are a great many cases along the same line. An automobile salesman guaranteed that a certain car would give 22 miles to the gallon of gasoline. If this sale had been made under the usual iron-clad printed form used by most manufacturers, there might not have been much to the claim, but as the parties were close friends it slipped through without. It was practically a verbal sale. The customer rejected the car on the ground that at best it would not give more than 14 miles. The employer of the salesman took the position that the guarantee was void because the salesman had no authority to make it, but the court held that it was within the scope of an automobile salesman's employment to state to a prospective customer how much mileage it would give to the gallon of fuel, and the employer was therefore bound.

In most of these cases the employer had not been careless. He had either not instructed the salesman to do what he had done, or had explicitly instructed him to do something else. The salesman did what he did without the slightest express authority, but the courts have always held that even the clearest instructions by employer to employee made no difference, if the employee, in violating them, acted within the scope of his employment.

The only protection which the employer has against this sort of thing is to get the right kind of salesmen and give them the clearest possible instructions what to say about the goods they sell. Many employers attach tags or labels to goods containing as much of a description as they can, so as to leave as little as possible for the salesman to say.

(Copyright, October, 1917, by Elton J. Buckley.)

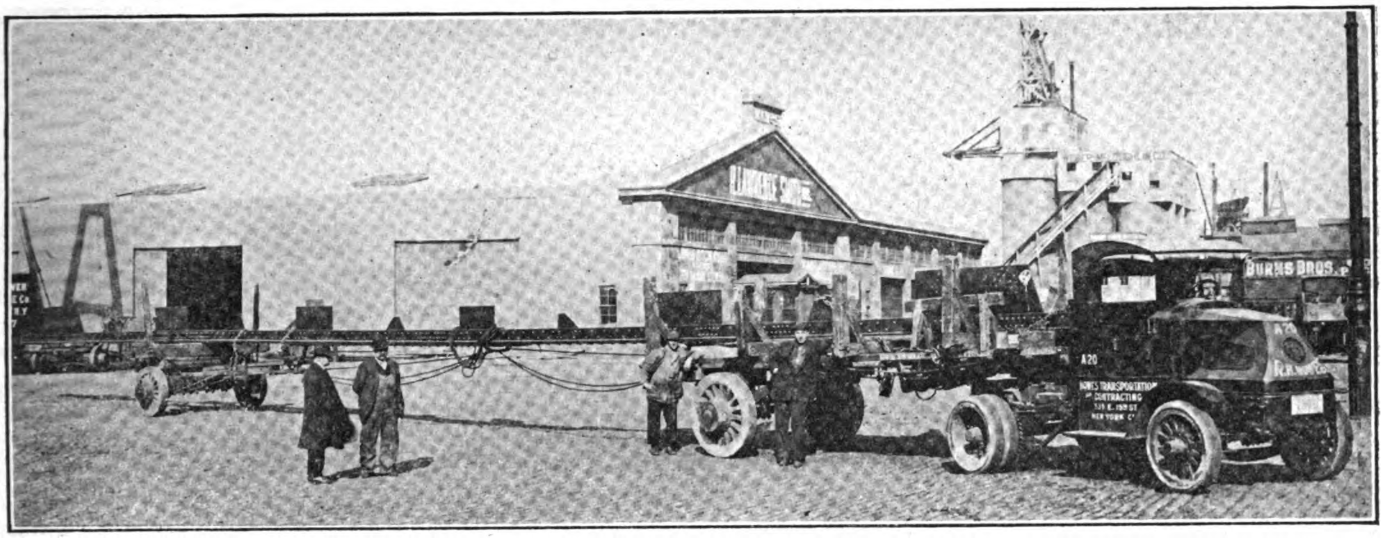
## "SERVICE THE SUCCESSOR TO SELLING" HYATT.

The Hyatt Roller Bearing Co., Detroit, Mich., has issued a neat little folder, entitled, "Service the Successor to Selling," explaining the company's policy of backing up its products with real service to manufacturers, dealers, salesmen and the general public.

"Such is our conception of service," says the writer, "the Hyatt company is glad to have it known that it freely renders such aid, and would be proud to demonstrate how thorough it is and how useful it might be to you."

## NEW ERA'S HEADQUARTERS AT GRAND RAPIDS.

To enable the various officials to keep in closer touch with manufacturing conditons at their plant, the New Era Spring and Specialty Co. will remove its headquarters from Detroit to Grand Rapids, Mich.



**Tractor, Semi-Trailer and Two-Wheel Truck Loaded with 90-Foot Girder, Weighing 12 Tons, at Pier at Foot of 131st Street, New York City, Ready for Haul to New Gymnasium of Barnard College.**

# RECORD OF NEW BUILDING PLANS IN OCTOBER

## Contracts Made and Plans Contemplated for Alterations or the Building of Garages, Repair Shops, Service Stations and New Plants.

### Contemplated Plans and Specifications.

**Pueblo, Col.;** Dundee Market and Grocery; one-story garage, 25x68.

**Bridgeport, Conn.;** James Romanelli; one-story public garage, 80x95.

**Putnam, Conn.;** Henry J. Steinberg, Webster, Mass.; one-story garage; $40,000.

**Waterbury, Conn.;** Samuel Kastleman, 235 N. Elm street; one-story garage, 40x60; $2500.

**Wilmington, Del.;** Dr. S. G. Elbert, 1030 French street; three-story public garage, 115x100; $25,000.

**Auburndale, Fla.;** Elmer E. Cline; two-story cement garage, 50x90; including shop, storage and supply station.

**Hastings, Fla.;** Silva & Beach; one-story garage, 150x50; install gas engine, electrical storage batteries, generators, etc.

**Lincolnton, Ga.;** D. T. Clary; one-story concrete garage and salesroom, 105x70; tin roof; cement floors; $4000.

**Bluffs, Ill.;** F. M. Lewis; one-story garage, 40x100; $10,000.

**Chicago, Ill.;** Charles F. Trapp, 2111 W. Lake street; one-story garage, 50x125; $14,000.

**Chicago, Ill.;** Hotel La Salle Co., James W. Stevens, president, Madison avenue and La Salle street; seven-story garage and storage station, 180x80.

**Chicago, Ill.;** Wells Motor Co.; 3261 Fullerton avenue; service building; $35,000.

**Chicago, Ill.;** Davidson & Weiss, 53 W. Jackson boulevard; one-story private garage, 109x125.

**Chicago, Ill.;** A. Charvat, 1803 S. Ashland avenue; one-story garage, 24x30; $1500.

**Chicago, Ill.;** Davidson & Weiss, 53 W. Jackson boulevard; one and two-story garage, 180x176; $120,000.

**Chicago, Ill.;** Hygenic Ice Co., 5327 Kenwood avenue; one-story garage, 60x30; $1500.

**Chicago, Ill.;** J. K. Neebe, 1859 Chicago avenue; one-story garage, 50x130; $16,000.

**Chicago Heights, Ill.;** Johnson Oil Refining Co.; one-story private garage, 60x74.

**Galesburg, Ill.;** Galesburg Machine Works, 260 S. Seminary street; two-story public garage and show room, 115x132; $50,000.

**Kewanee, Ill.;** G. K. Tracy, 417 N. Main street; one-story public garage, 72x150; $15,000.

**Peoria, Ill.;** H. B. Dox, 301 Apollo Theatre building; one-story public garage, 25x30; $600.

**Peoria, Ill.;** Mackemer Motor Co., 715 Main street; two-story public garage, 100x150; $50,000.

**Salem, Ill.;** J. E. Pfeffer; two-story garage, 70x130; $20,000.

**Staunton, Ill.;** G. E. Brubaker, Litchfield, Ill.; one-story garage, 41x108; $6000.

**Streator, Ill.;** Williams Hardware Co.; one-story garage, 32x140; $10,000.

**Jasonville, Ind.;** Letsinger & Letsinger, Bloomfield, Ind.; one-story public garage, 42x98; $4500.

**Walkerton, Ind.;** Rudd Motor Co.; one-story public garage, 50x120; $10,000.

**Glenwood, Ia.;** Mills County National Bank; one-story garage, 54x60; $7000.

**Jesup, Ia.;** Bright Werling Co. & Wroten; one-story public garage, 45x150; $12,000.

**Nevada, Ia.;** S. S. Hanson; one-story garage, 100x140; $15,000.

**Coats, Kan.;** E. F. Jacks; one-story garage, 50x40; $10,000.

**Ashland, Ky.;** Meanor & Sweeney, 917 R. and P. building, Huntington, W. Va.; one-story garage, 50x142; $8000.

**Kevil, Ky.;** W. L. Beck; one-story brick fireproof garage, 50x100; install machinery and tools for automobile repairing. Also to deal in accessories.

**Leesville, La.;** Noan Mills Co.; one-story brick garage, 60x100. Lessee, H. E. Werner.

**New Orleans, La.;** H. M. Field; fireproof garage; $50,000. Lessee, Universal Motor Co.

**Lewiston, Me.;** Holmes & Bedell; one-story public garage, 64x75; $15,000.

**Baltimore, Md.;** Colonial Development Co., 102 E. Lexington street; one-story brick garage on alley, between Park Heights and Cottage avenue, 301x38; $8000.

**Baltimore, Md.;** Lombardy Apartments Co., 40th street and Stony Run lane; one-story brick commercial garage, 52x67.

**Baltimore, Md.;** Standard Oil Co., Harford road and B. & R. R.; one-story brick and concrete garage, 20x30.

**Baltimore, Md.;** Victor S. Harding, 1825 Warwick avenue; one-story public garage, 25x75; $5000.

**Boston, Mass.;** Wilbur Gillespie, 708 Columbia road, Dorchester district; two-story garage, shop and office, 26x55; $5000.

**Boston, Mass.;** E. L. Snider, 18 Tremont street; six-story public garage, 123x74.

**Boston, Mass.;** Portland Street Garage, Inc.; six-story garage, 78x140; $175,000.

**Boston, Mass.;** Abe Label, 77 Grove street; one-story public garage, 190x120; $45,000.

**Boston, Mass.;** P. McColgan & Son, 83 Spencer avenue; one-story private garage, 50x65; $7500.

**Chelsea, Mass.;** J. Lipsitz Co., 289 Third street; one-story private garage, 40x30; $5000.

**Chicopee, Mass.;** Cleophas Vandanie, 27 Bliss street, Springfield, Mass.; one-story public garage, 50x100; $9000.

**East Boston, Mass.;** A. De Stefano, 10 Everett street; two-story public garage, 25x100.

**Everett, Mass.;** Archibald Sheppard, 50 Vernal street; one-story public garage, 24x96; $4000.

**Everett, Mass.;** Frank Ferdinand, 2260 Washington street; one-story public garage, 140x100; $25,000.

**Lawrence, Mass.;** John F. Haffner; one-story garage, 22x50; $3000.

**Lowell, Mass.;** Frod Street Garage; Mrs. Adele Belgin, care Benjamin A. Belgin, 475 Moody street; one-story garage, 22x50; $3000.

**Medford, Mass.;** John A. Walker, Jr., 460 Salem street; one-story public garage, 100x135; $50,000.

**New Bedford, Mass.;** Charles O. Brightman, 72 N. Water street; one-story garage, 44x74; $5000.

**New Bedford, Mass.;** Charles H. Reed, 18 Tremont street; one-story public garage, 40x70; $5000.

**New Bedford, Mass.;** Charles T. Joeries, 57 Locust street; one-story garage, 25x50; $2500.

**New Bedford, Mass.;** Frank P. Medenois, 314 Dartmouth street; one-story garage, 30x40; $2500.

**New Bedford, Mass.;** Mortimer McCarty, 258 State street; one-story garage, 40x80; $5000.

**Newton, Mass.;** Elmwood Investment Co., care Brainerd & Leeds, 89 Franklin street, Boston; one-story public garage, 60x150.

**Watertown, Mass.;** Anthony Prestera, 18 Bostonia street; one-story private garage, 37x21.

**Woburn, Mass.;** Arthur T. Nelson, 15 Beacon street, Boston; one-story public garage, 80x100; $10,000.

**Worcester, Mass.;** N. R. Power, 19 Merrifield street; one-story private garage, 36x42; $3000.

**Detroit, Mich.;** Morris A. Zack, 186 E. Hancock avenue; one-story public garage; $5000.

**Detroit, Mich.;** E. W. Mihok, 140 Harbaugh avenue; one-story public garage, 48x68; $6000.

**Detroit, Mich.;** Albert Fox, 680 Manistique avenue; one-story garage, 81x30.

**Detroit, Mich.;** Harry Martin, 170 Dexter boulevard; one-story garage, 60x140; $10,000.

**Grand Rapids, Mich.;** Roger Mao; one-story public garage, 75x88; $12,000.

**Hesperia, Mich.;** McCullen & Winters; one-story public garage, 45x100; $10,000.

**Minneapolis, Minn.;** William G. Iverson, 3737 Minnehaha avenue; one-story public garage, 40x100.

**Nashwank, Minn.;** Oscar Johnston; one-story garage, 120x34; $5000.

**Kansas City, Mo.;** Oakland Motor Co.; four-story garage, machine and repair shop, 118x50.

**Kansas City, Mo.;** White & Dean, 311 Bellefontaine street; one-story garage, 20x40; $800.

**Keytesville, Mo.;** Central Coal and Coke Co., Keith and Perry building; one-story garage, 50x84.

**Oak Grove, Mo.;** Turner & McCormick; one-story garage, 73x130; $10,000.

**St. Louis, Mo.;** Bush Burns Realty Co., 1105 Chestnut street; one-story garage, 84x104; $5000.

**St. Louis, Mo.;** R. S. Traber, 1006 Fullerton building; one-story garage and repair shop, 25x110; $5000.

**David City, Neb.;** Jack Kasparek; two-story garage, 75x140.

**Omaha, Neb.;** Charles Randall, care Richard Everett, 201 McCague building; two-story garage and sales room at 2562-68 Leavenworth street.

**Camden, N. J.;** Thomas E. French; one-story garage, 20x100; $4500.

**Jersey City, N. J.;** John Boylan, 135 Bright street; one-story public garage, 50x100; $8000.

**Newark, N. J.;** John Verrier, 564 Orange street; 25 one-story garages, 54x99x91x100; $7000.

**Newark, N. J.;** Harry Englehard and Sydney Elschbein, 484 Market street; one-story public garage, 60x100; $10,000.

**Newark, N. J.;** Morris Hecht and Nathan Cross, 185 La Fayette street; public garage; $10,000.

**Newark, N. J.;** Kruvant, Mayzel Co., 189 Blomfield avenue; 30 individual garages; one-story, 60x150; $10,000.

**Newark, N. J.;** Foster L. Hatch, 891-92 Clifton avenue; one-story public garage, 60x75.

**Newark, N. J.;** Samuel Gross, 20 Broome street; one-story garage, 34x54; $5000.

**Orange, N. J.;** Anthony Martin; one-story garage, 40x96; $12,000.

**Passaic, N. J.;** Ginsburg Brothers, care A. S. Ginsburg, 11 Bloomfield avenue; 32 individual garages and show rooms, 40x160; at 202-6 Main avenue; $10,000.

**Albany, N. Y.;** Edward J. Bear, 307 Sherman street; one-story garage, 30x114; $8000.

**Albany, N. Y.;** Joseph J. Bastian, Jr., 527 Morris street: one-story garage, 20x33; $2500.

**Albany, N. Y.;** W. Le May and J. H. Repp, 43 Garfield place; one-story garage, 40x92; $3500.

**Brooklyn, N. Y.;** Peter Cleary, 115 Marion street; one-story garage, 50x100; $10,000.

**Brooklyn, N. Y.;** Mrs. Ida Mayer, 847 Willoughby avenue; one-story garage, 40x44; $3000.

**Brooklyn, N. Y.;** John Digrovanna; one-story garage, 21x70; $3000.

**Brooklyn, N. Y.;** Nicholas Rother, Central avenue and Chauncy street; two-story garage, 75x100; $14,000.

**Brooklyn, N. Y.;** Alrid Beaure, 343 Monahan street; one-story garage, 14x49; $6000.

**Brooklyn, N. Y.;** Edward Nadro, 292 St. Johns place; one-story garage, 50x107; $12,000.

**Brooklyn, N. Y.;** Doehler Die Casting Co., Court and Ninth streets; one-story garage and storage station, 42x292; $18,000.

**Brooklyn, N. Y.;** Henrietta Reisenheimer, 54 Somer street; one-story garage, 50x100; $15,000.

**Brooklyn, N. Y.;** Richard Hirsch, 257 Euclid avenue; 11 one-story garages; $8000.

**Brooklyn, N. Y.;** Humboldt Ice and Coal Co., 169 Meserole avenue; one-story garage, 127x125; $75,000.

**Brooklyn, N. Y.;** Robert Freedman, 4185 Fulton street; one-story garage, 220x157; $50,000.

**Brooklyn, N. Y.;** Rosevale Realty Co., 189 Montague street; one-story garage, 50x100; $8000.

**Brooklyn, N. Y.;** Bismarck Realty Co., 892 Broadway; one-story garage, 45x20; $8000.

**Brooklyn, N. Y.;** Peter F. Reilly, 617 Dean street; one-story garage, 20x140; $6000.

**Brooklyn, N. Y.;** Alvina Braun, 343 Menahan street; one-story public garage, 75x60; $6000.

**Brooklyn, N. Y.;** Mr. Warshawsky, 439 Glenmore avenue; four one-story private garages, 10x20; $4000.

**Brooklyn, N. Y.;** Conrad Pfelging, 7017 Third avenue; one-story garage, 50x100; $12,000.

**Brooklyn, N. Y.;** Lillian Rosenthal, 27 Pennsylvania avenue; one-story garage, 13x100; $4000.

**Brooklyn, N. Y.;** Biltmore Construction Co., David Groewald, president, 215 Montague street; one-story garage, 109x149; $25,000.

**Brooklyn, N. Y.;** Thomas Bennett, Fifth avenue and 179th street; one-story garage, 50x100; $15,000.

**Brooklyn, N. Y.;** Annie J. Haar, 672 St. Marks place; one-story garage; $25,000.

**Buffalo, N. Y.;** Pepe & Son, 385 E. Swan street; one-story public garage; $3000.

**Buffalo, N. Y.;** Grace M. Knox, 1045 Delaware avenue; one-story garage, 24x24 and 31x74; $20,000.

**Canton, N. Y.;** Edward Rushton; one-story garage, 100x120; $45,000.

**Highland, N. Y.;** Du Bois Carpenter, 45 Market street; two-story private garage, 28x53; $3000.

**Jamaica, L. I., N. Y.;** Patrick McMahon; one-story garage and storage station, 90x100; $15,000.

**Little Neck, L. I., N. Y.;** C. W. Gennell; one-story garage, 60x100; $3000.

**New York, N. Y.;** S. J. F. McGuire Estate, 55 Liberty street; one-story garage, 43x54; $11,000.

**New York, N. Y.;** Gaetano Rosanno, 2132 First avenue; one-story garage, 30x100; $10,000.

**New York, N. Y.;** John Adierus, 255 E. 152nd street; one-story garage, 54x125; $5000.

**New York, N. Y.;** Land Estates, Inc., William Zantzing, president, 135 Broadway; one and two-story garage, 56x100; $5000.

**New York, N. Y.;** Irving Margon, 370 E. 149th street; one-story garage, 15x52; $2000.

**New York, N. Y.;** John Graf; one-story private garage, 20x24; $3000.

**New York, N. Y.;** 419 E. 49th Street Corporation, James A. Martin, president, 64 Wall street; one-story garage; $25,000.

**New York, N. Y.;** Daniel J. Goodwin, 332 E. 95th street; two-story garage, 75x94; $40,000.

**New York, N. Y.;** Hugh McLernon, 128 W. Fordham road; one-story garage, 100x100; $6000.

**New York, N. Y.;** Ward Baking Co., Southern boulevard and 143rd street; one-story garage, 83x200; $20,000. Lessee, Jacob Fradus, 351 W. 52nd street.

**New York, N. Y.;** Mary Connelly, 21 Broome street; one-story garage, 125x100; $20,000.

**New York, N. Y.;** George S. Selzer; one-story garage; $3000.

**New York, N. Y.;** Empire Trust Co., 120 Broadway; four-story garage, 54x94; $75,000.

**New York, N. Y.;** Street Coal Co.; one-story garage, 50x75; $8000.

**Ridgewood, L. I., N. Y.;** Anton Scholl, 357 St. Nicholas avenue; one-story garage, 22x100; $4500.

**Ridgewood, L. I., N. Y.;** Church & Gough, 1344 Jefferson avenue; two one-story garages, 38x100; $6000.

**Rochester, N. Y.;** Jos. T. Alling, 400 Oxford street; 2½-story private garage, 63x27.

**Rochester, N. Y.;** Hutchison & Strutz, 207 Cutler building; one-story garage, 22x24.

**Schenectady, N. Y.;** Felix Schwermer, 200 Parkwood boulevard; one-story garage, 40x60; $4000.

**Syracuse, N. Y.;** Raymond Valerio, 712 Townsend street; one-story garage; $5000.

**Wilson, N. C.;** Welfare Automobile Co., 226 Goldsboro street; six-story concrete, steel and brick automobile building; install electric elevators, steam heat; $75,000.

**Grand Forks, N. D.;** Dr. J. E. Engstod; one-story private garage, 20x30; $2000.

**Cincinnati, O.;** Frank Fuller, 2021 Vine street; one-story garage, 62x42; $8000.

**Cincinnati, O.;** Anton Rieg, 2554 Vine street; one-story private garage, 18x20; $1200.

**Cleveland, O.;** S. W. Mather, 2401 Holmden avenue; one-story private garage, 42x148; $15,000.

**Cleveland, O.;** Frank J. Svoboda, 3308 E. 55th street; two-story garage, 45x130; $20,000.

**Cleveland, O.;** H. M. Morse & Co., 1303 Citizens building; one-story garage, 30x50; $6000.

**Columbus, O.;** Howard Monett, 814 Wyanette building; one-story garage, 64x100.

**Dayton, O.;** J. E. Jones, 209 Central avenue; 1½-story private garage, 28x30.

**Elyria, O.;** E. W. Brown; two-story private garage, 20x28; $3000.

**Piqua, O.;** Dr. A. B. Frame; one-story garage, 30x22.

**Risingsun, O.;** Brandyberry Hardware Co.; one-story garage and sales room, 50x125.

**Toledo, O.;** E. E. Culver, care O. W. Beelman 812 Second National Bank building; one-story public garage, 60x100.

**Toledo, O.;** Sweet Brothers, 2122 N. 17th street; one-story garage, 25x80.

**Youngstown, O.;** C. J. Craber; one-story garage, 52x100; $9000.

**Okmulgee, Okla.;** X. R. Gill; two-story garage, 80x100; $30,000.

**Sapulpa, Okla.;** Uttz Manufacturing Co., Kansas City, Mo.; building on one acre site for manufacture of automobile accessories, etc.

**Tulsa, Okla.;** H. E. Bagby; three-story garage, 50x140; $25,000.

**Ashland, Pa.;** Fountain Springs Country Club, care Dr. J. C. Biddle: one-story garage, 32x140; $6000.

**Berwick, Pa.;** Morton Brothers, 100 W. Front street; two-story public garage, 70x150; $20,000.

**Coatesville, Pa.;** Kerns & Carroll, 242 E. Main street; one-story garage, 40x150; $15,000.

**Erie, Pa.;** R. P. Dodsworth, 1015 W. 10th street; one-story garage, 55x122; $3000.

**Fleetwood, Pa.;** A. P. Merkel; two-story public garage, 50x115; $15,000.

**Harrisburg, Pa.;** Harrisburg General Hospital; two-story private garage, 26x28; $3500.

**Harrisburg, Pa.;** Henry Claster, 302 Market street; one-story garage, 100x164; $15,000.

**Lansdowne, Pa.;** J. C. Watons, 8 S. 52nd street, Philadelphia; 20 one-story garages, 10x16; $7000.

**Latrobe, Pa.;** Keystone Motor Co.; one-story commercial garage, 49x96; $8500.

**Pittsburgh, Pa.;** J. N. Staun, 6337 Jackson street; 16 private garages; $64,000.

**Pittston, Pa.;** J. L. Farrarini, 76 N. Main street; one-story garage, 29x20; $3000.

**Philadelphia, Pa.;** E. M. Flood, 16th and Cherry streets; two-story garage, 36x80; $5000.

**Philadelphia, Pa.;** R. J. Aiken, care Wyoming Construction Co., 1416 S. Penn square; one-story public garage, 50x178; $14,000.

**Rosemont, Pa.;** L. O. Gramley, 27 S. Main street, Bethlehem, Pa.; two-story garage and storage station, 62x32; $5000.

**Sharon, Pa.;** John W. English; two-story garage and sales room, 74x105; $20,000.

**Spartanburg, S. C.;** Arch B. Calvert; one-story garage on site 95x100.

**Clark, S. D.;** Brown Brothers; one-story garage, 100x50.

**Hitchcock, S. D.;** John Kingdon; one-story garage, 100x50.

**Abilene, Tex.;** J. M. Radford and R. C. Lewis; one-story brick and stone garage, 50x120; cement floor; $10,000.

**Texarkana, Tex.;** Stone Tractor Co.; W. C. Brady, secretary; building to be equipped to manufacture farm tractors, motor trucks and farming machinery; main building, 80x180; office, 20x40; unloading platform, 20x80; railroad spur line along platform.

**Wichita Falls, Tex.;** H. Chenault; two-story brick automobile building, 150x50; repair shop on second floor; office and sales room on first floor. Lessee, Stanley Motor and Supply Co.

**Big Stone Gap, Va.;** Mineral Motor Co., care W. H. Wrenn; two-story garage, 57x100; $10,000.

**Charlottesville, Va.;** Charlottesville Hardware Co., J. P. Carroll, manager; three-story public garage, 80x175; $20,000.

**Covington, Va.;** Allegheny Garage; fireproof garage, 48½x150; $20,000.

**Lynchburg, Va.;** M. M. Moorman, People's Bank building; two-story garage, 20x27; $3000.

**Adell, Wis.;** P. H. Slattery; one-story garage, 45x90; $6000.

**Cudahy, Wis.;** S. F. Kadow, 451 Mitchell street, Milwaukee; one-story private garage; $3000.

**Deerfield, Wis.;** Lakemills Automobile Co., Lakemills, Wis.; one-story garage, 60x90.

**Green Bay, Wis.;** C. H. Williams, Parmentier building; two-story garage, 125x160.

**Kaukauna, Wis.;** William Leishout; two-story garage, 22x100.

**Milwaukee, Wis.;** A. J. Gamm, 870 Second street; one-story garage, 21x47; $2000.

**Milwaukee, Wis.;** Bleum & Hartung, 1443 Fond du Lac avenue; one-story garage and show room, 57x100; $10,000.

**Milwaukee, Wis.;** K. Fennig, 403 Lincoln avenue; one-story garage, 22x44; $1400.

**Milwaukee, Wis.;** Jack Koenen, 867 Robinson avenue; one-story garage, 20x40; $1000.

**Milwaukee, Wis.;** Leiser & Holst, Germania building; one-story garage, 42x100; $6000.

**Port Washington, Wis;** Fred Graf, Mathews building, Milwaukee; one-story garage and show room, 60x100; $8000.

**Sparta, Wis.;** George M. Newton; one-story private garage, 18x22; $2500.

# GARAGE CONTRACTS RECENTLY AWARDED

## General Constructions and Service Stations Erected Far and Wide in a Season of Heavy Demand for Storage Space

**Denver, Col.;** Stocker & Fraser, 217 Chamber of Commerce building; one-story garage, 89x100; for Denver Union Stock Yards Co.; $10,000.

**Denver, Col.;** Fleming Brothers, 101 Broadway; one-story garage, 50x150; for H. W. Hendricks; $20,000.

**Denver, Col.;** U. L. Martz; three-story garage, 34x54; for A. T. Harnois, 100 16th avenue; $16,000.

**Denver, Col.;** C. L. Foulk, 1255 S. York street; two-story garage and storage station, 50x120 and 32x85; for Sinclair Refining Co., 814 Central Savings Bank building; $30,000.

**New Britain, Conn.;** B. H. Hibbard & Co., 140 Main street; one-story private garage, 30x38; for National Spring Bed Co., High and Lake streets; $5000.

**New Haven, Conn.;** David H. Clark Co., 166 Brewery street; one-story service station, 98x98x52; for Smedley Co., 169 Brewery street; $5000.

**Washington, D. C.;** George S. Kendall; one-story garage for C. B. M. Allister; $20,000.

**Washington, D. C.;** Arthur T. Smith & Co.; one-story garage for Chris. Henrich Co.; $13,000.

**Cocoanut Grove, Fla.;** St. John Construction Co.; one-story fireproof garage, 32x56; for John Bindley.

**Chicago, Ill.;** B. Boeff, 105 N. Clark street; one-story public garage, 50x125; for M. Stern; $10,000.

**Chicago, Ill.;** Charles Bowsher, 1429 E. 64th street; one-story garage, 150x20; $6000.

**Chicago, Ill.;** S. Clifford, 10 S. La Salle street; one-story garage, 50x175; for M. J. Christensen, 5535 S. State street; $18,000.

**Johnston City, Ill.;** R. C. Mall, West Frankfort, Ill.; one-story garage, 40x100; for Mr. Noland; $3800.

**Joliet, Ill.;** R. Stark, 5205 Sangamon street, Chicago; one-story garage, 50x124; for Stephan Otham; $14,000.

**Robinson, Ill.;** William Boyd; one-story garage; for Robinson Motor Car Co.; $15,000.

**Vandalia, Ill.;** J. S. Evans & Son; one-story public garage, 60x20; $15,000.

**French Lick, Ind.;** W. H. Lutes; one-story garage, 120x120; for F. D. Arthur, care Homestead Hotel, West Bend, Ind.; $20,000.

**Gary, Ind.;** Dan Chappele; one-story garage, 22x40; for Vasile Vangeloff, 1311 Adams street; $3000.

**Indianapolis, Ind.;** Burnside Smith, 2371 N. Illinois street; one-story public garage, 164x104; for J. C. Smith, 3153 College avenue; $15,000.

**Indianapolis, Ind.;** A. T. Rybolt, 2038 Chestnut street; one-story public garage, 50x80; for Albert E. Van Atta, 1027 Fletcher avenue; $2000.

**Jasonville, Ind.;** William Anderson, Linton, Ind.; one-story garage, 42x98; for H. W. Lettsinger, Bloomfield, Ind.; $5000.

**Algona, Ia.;** Dickenson & Matson; one-story garage, 88x132; $8000.

**Cumberland, Ia.;** John A. Malloy, Creston, Ia.; one-story garage, 50x125; for P. Pettinger; $8000.

**Schleswig, Ia.;** J. F. Kobles, Carroll, Ia.; one-story garage for C. D. Lafrentz; $16,000.

**Sioux City, Ia.;** C. R. Norton, 1014 Pearl street; one-story garage, 40x60; for Frank Witcher; $5000.

**Sioux City, Ia.;** B. E. Short, 420 Court street; three-story automobile sales building; for Lessnich estate, care Beuttler & Arnold, 609 Security building; $50,000.

**Wichita, Kan.;** Dieter & Wenzel; one-story garage, 50x150; for Joodin Motor Co.; $8000.

**Wichita, Kan.;** H. K. Ellis Construction Co.; two-story garage, 50x140; for Lörentz Schmidt, 121 N. Market street.

**Baltimore, Md.;** H. M. Reinhart, 517 Calvert building; one-story public garage, 36x77; for C. H. Clemons, care S. J. Lyon, 747 Equitable building; $5000.

**Baltimore, Md.;** Harry Fox, 2411 Greenmount avenue; one-story brick garage, 30x118; at Harford road and 25th street; for W. J. Perry; $10,000.

**Boston. Mass.;** Peter Viola, 320 Norfolk avenue, Dorchester, Mass.; one-story public garage, 137x50; for H. P. Gallup, 141 Welles avenue, Dorchester, Mass.; $25,000.

**Boston, Mass.;** William Crane, Haywood and Amherst streets, Cambridge, Mass.; one-story automobile show room, 20x50; for A. Hollingsworthy, Milton, Mass. Lessee, Charles W. Muldoon, 1619 Blue Hill avenue, Mattapan district, Boston.

**East Boston, Mass.;** Samuel Lishner, 955 Saratoga street; one-story public garage, 75x120; for Nathan L. Deutch, 1006 Bennington street; $35,000.

**Hyde Park, Mass.;** Henry A. Vincent, 56 Warren street; one-story automobile show room, 50x85; for Joseph Vantole.

**New Bedford, Mass.;** Ricard & Daval, 58 Middle street; one-story public garage, 89x80; for Benjamin Cummings, 104 Williams street; $8000.

**New Bedford, Mass.;** Manuel Baptist, 34 Page street; one-story garage and shop, 40x60; for Julian P. Carreia, 125 Holly street; $6000.

**Revere, Mass.;** John B. Airola, 77 Ocean avenue; one-story public garage, 76x100; for Theresea C. Airola, 366 Ocean avenue; $7000.

**Springfield, Mass.;** Theodore H. Nye, 11 Ingersoll Grove; one-story private garage, 20x42; $3500.

**Springfield, Mass.;** G. P. Stratton, 157 Marlborough street; one-story garage, 29x20; at 73 Bond street; for Dennis A. Donovan.

**Taunton, Mass.;** Paul Oulette; one-story public garage, 45x100; for Christopher Benoit; $7000.

**Uxbridge, Mass.;** E. D. Ward, 82 Foster street, Worcester, Mass.; one-story garage, 30x72; for Uxbridge Worsted Co.; $5000.

**Watertown, Mass.;** A. P. Fraser, 37 Union street; one-story public garage, 75x84x91; for Harry E. Hall, 73 Marshall street; $13,000.

**St. Paul, Minn.;** O. H. Rundquist, 1466 Selby avenue; one-story private garage; for Henry E. Smith, 9 Crocus Hill; $2000.

**Wells, Minn.;** J. B. Nelson Construction Co., 503 Belgrade avenue; one-story public garage, 75x70; for B. O. Hinjum; $10,000.

**Kansas City, Mo.;** McCallum Realty Co., 3443 Benton boulevard; one-story automobile sales room, 97x129; for E. C. Sooy, 2616 E. 29th street; $15,000.

**St. Louis, Mo.;** Theodore H. Ratz, 4333 Taft avenue; one-story public garage, 50x110; for Felix Scalzo, 3515 Morgan street; $10,000.

**St. Louis, Mo;** J. Chapman, 4109 W. Lee avenue; one-story private garage, 21x121; for Mrs. K. A. Stoeckhardt, 5191 Cates avenue; $1700.

**Manchester, N. H.;** H. Macropol, 551 S. Spruce street; one-story public garage, 22x60; for George Copadis, 41 Spruce street; $3000.

**Orange, N. J.;** Charles Franz, Elizabeth, N. J.; 20 one-story garages; for Brueckner Realty Co., Inc., West New York, N. J.; $8000.

**Brooklyn, N. Y.;** Robert T. Buttelman, 2 Epsilon place; one-story garage, 40x100; for Ort & Co., Green and Wyckoff avenues; $8000.

**Union Hill, N. J.;** Charles H. Neilson, Seventh street and Broadway, West New York, N. J.; two-story public garage, 75x100; for Henry Brothers, 221 Third street; $25,000.

**Niagara Falls, N. Y.;** Charles Moyer & Son, 633 10th street; two-story service station, 36x54; for Oldbury Electric Chemical Co.; $10,000.

**Rochester, N. Y.;** George Metz, 473 Seneca parkway; one-story garage, 27x32; $2500.

**Rochester, N. Y.;** Thomas Jameson, 712 Main street; one-story garage, 28x23.

**Saratoga Springs, N. Y.;** W. S. Robertson; one-story garage for A. S. Clark; $1400.

**Cincinnati, O.;** William Miller & Sons, 2100 Elm street; one-story private garage, 22x20; for Charles Lorentz, northwest corner Fairview and Warner avenues; $1200.

**Cincinnati, O.;** H. Stanforth, Minot and 28th streets; one-story garage, 24x18; for A. J. Murphy, Edwards street and Madison road; $1500.

**Cincinnati, O.;** Ferro Concrete Construction Co., Richmond and Harriet streets; one-story garage, 32x51; for Charles Boldt Glass Co., Davis and Lane streets; $3000.

**Allentown, Pa.;** Ochs Construction Co., Fifth and Wire streets; two-story garage, 38x75; for Dr. C. S. Schaeffer, 30 N. Eighth street; $3000.

**Nazareth, Pa.;** Henry Roth; two-story garage, 24x26; for Morris Fortune; $4000.

**Philadelphia, Pa.;** John F. Holland; one-story garage, 100x34; south side Whitby avenue, west of 53rd street; $3000.

**Philadelphia, Pa.;** Rudolph Lukens; hollow tile garage, 17.5x18.5; at 1867 Wynnewood road; for Walter R. Sparks; $7775.

**Philadelphia, Pa.;** William McCormick; brick garage, 100x51.8, south side Westminster avenue, east of 51st street; $4000.

**Philadelphia, Pa.;** F. T. Mercer; one-story garage, 80x100; east side 63rd street, above Woodbine avenue, for R. U. Jones; $12,000.

**Philadelphia, Pa.;** W. C. Wright; one-story brick garage, 17.10x21; at 149 West Tulpehocken street; for H. D. Booth; $1700.

**Philadelphia, Pa.;** C. M. Swartley; one-story brick garage, 13x24; at 1618 North 16th street; $500.

**Philadelphia, Pa.;** Atlantic Refining Co.; brick and concrete garage, 49.1x226.9, and brick and concrete garage and wash room, 48x226; north side Oregon avenue, west of 26th street; $23,000.

**Philadelphia, Pa.;** James E. Sharkey; brick garage, 53x226; south side Woodland avenue, west of 53rd street; $13,000.

**Philadelphia, Pa.;** Rush Brothers; one-story brick garage, 26x28; south side Margaret street, east of Duffield street; for Johanna Ward; $1600.

**Philadelphia, Pa.;** Cramp & Co.; two-story brick and reinforced concrete automobile sales building, 43.1x217.8; at 1627-29 Arch street; for Mastbaum Brothers & Fleisher; $55,000.

**Philadelphia, Pa.;** William Schmitt; one-story brick garage, 24x18; north side Ashdale, east of Fifth street; for J. Rebstock; $500.

**Philadelphia, Pa.;** Edward B. Miller; one-story brick garage, 14x19; north side Raymond street, east of Eighth street; for Frank Bradfield; $750.

**Philadelphia, Pa.;** Milton W. Young; one-story brick garage, 15.6x23.6; at 6401 Drexel road; for Mrs. F. D. Casanave; $2000.

**Philadelphia, Pa.;** Roxborough Plumbing and Heating Co.; stone garage, 19x250, and one-story stone machine shop, 40x80; west side Ridge avenue, south of Leverington street; for Albert Berry; $5000.

**Philadelphia, Pa.;** W. H. Eddleman & Sons; brick garage, 20x44; west side 24th street, north of Vine; for Ford & Kendig Co.; $500.

**Philadelphia, Pa.;** W. H. Eddleman & Sons, stone garage, 22x27; west side Ridge avenue, south of Wigard avenue; for George W. Davis; $2000.

**Philadelphia, Pa.;** Edward F. Judge, 3003 Richmond street; one-story garage and storage station, 20x100; for John McAleer, 2916 Richmond street; $2500.

**Philadelphia, Pa.;** John T. Morrow, 2647 Orthodox street; one-story garage, 18x105 and 30x20; for M. F. Fisch, 3216 Marshall street; $5000.

**Philadelphia, Pa.;** Barnes Brothers, 2080 Willard street; one-story garage, 19x116; for R. B. Foster, 3634 Frankford avenue; $2500.

**Philadelphia, Pa.;** R. Van Cleave, 5106 Lindley street; one-story garage, 20x214; for Bernard J. Arndt, 2512 Germantown avenue; $6000.

**Philadelphia, Pa.;** Cramp & Co., 4 N. 11th street; two-story automobile show room, 33x115; for Overland Motor Co., 323 N. Broad street; $55,000.

**Philadelphia, Pa.;** Edward Holland; one-story brick garage, 13.6x19.6; west side Watt street, north of Dickinson street; for Antonio Reichezza; $600.

**Philadelphia, Pa.;** C. W. Rogers; one-story brick garage, 10x16; at 938 North 51st street; $500.

**Philadelphia, Pa.;** Ralph E. Robson; one-story stone garage, 27x57; at 617 Rector street; $2500.

**Philadelphia, Pa.;** L. Frank Hudson; one-story brick garage, 17.10x16; rear 5429 Whitby avenue; for Harry W. Stahl; $600.

**Philadelphia, Pa.;** Lorenzon Brothers; two-story stone and hollow tile garage, 34x29; at 8110-12 Devon street; $7000.

**Philadelphia, Pa.;** A. Pasquarello; one-story brick garage, 12x19, at 4908 Wayne avenue; $1000.

**Philadelphia, Pa.;** Harry H. Yerger; one-story brick garage, 16x46; at 4338 North Gratz street; for S. Gordon; $1000.

**Philadelphia, Pa.;** D. Henwood; one-story brick garage, 24.6x32; west side Glenwood avenue, north of Dauphin street; for George Nass & Son; $2200.

**Philadelphia, Pa.;** N. Raidman; one-story brick garage, 20x19.6; northeast corner 61st and Chestnut streets; for Bobrow Brothers; $1000.

**Philadelphia, Pa.;** W. Percival Johnson; one-story stone and brick garage, 16.4x22; at 5403 Woodbine avenue; $900.

**Philadelphia, Pa.;** John H. Frith; one-story brick garage, 74x18; at 5850 Osceola street; for Harry H. McKinney; $1000.

**Philadelphia, Pa.;** Marco Marks; four brick garages, each 12x16, at 600 to 606 Luray street; seven brick garages, each 12x16, at 601 to 613 Luray street; five brick garages, 12x16, at 607 to 615 Courtland street; $3200.

**Philadelphia, Pa.;** Philip Halbach Contracting Co.; one-story brick garage, 18x24, at 1137 Frankfort avenue; for J. D. Williams; $700.

**Philadelphia, Pa.;** John C. Fallon, 449 S. 60th street; one-story private garage, 18x80; for J. Ogden, 6035 Pine street; $8200.

**Pittsburgh, Pa.;** H. Rubenstein, 23 Mercer street; one-story private garage, 18x18; for S. Greenberg, 3158 Wylie avenue; $2500.

**Pittsburgh, Pa.;** Goldie Manufacturing Co., Thomas and Trenton avenues, Wilkinsburg, Pa.; 15 one-story garages, 40x132; for L. W. Knapp, 5806 Bartlett street; $9500.

**Pawtucket, R. I.;** J. F. Salisbury; one-story garage, 20x67, for Edward Gormley, 613 Pine street; $2500.

**Memphis, Tenn.;** A. B. Lanning; two-story brick garage for Madison Realty Co.; $18,000.

**Portsmouth, Va.;** J. N. Harris; one-story brick garage, 50x100; for John W. Ballard, Churchland, Va.; $3500. Lessee, Ford Automobile Agency.

**Fairmont, W. Va.;** Holbert & Spedden; two-story private garage for T. W. Arnett; $1500.

**Grand Rapids, Wis.;** Schroder & Miller, Daly building; one-story private garage, 24x36; for J. P. Witter, 867 Third street; $4500.

**Madison, Wis.;** E. J. Fisher; one-story garage, 28x66; $5000.

**Milwaukee, Wis.;** Edward Dreyer, 1008 Sixth street; one-story garage, 26x57, for Froedert Malting Co., 478 Seventh street; $2000.

**Stratford, Wis.;** Marshfield Hardware and Auto Co., 324 S. Central avenue, Marshfield, Wis.; one-story garage, 50x120; $10,000.

## Garages and Repair Shops In New Buildings

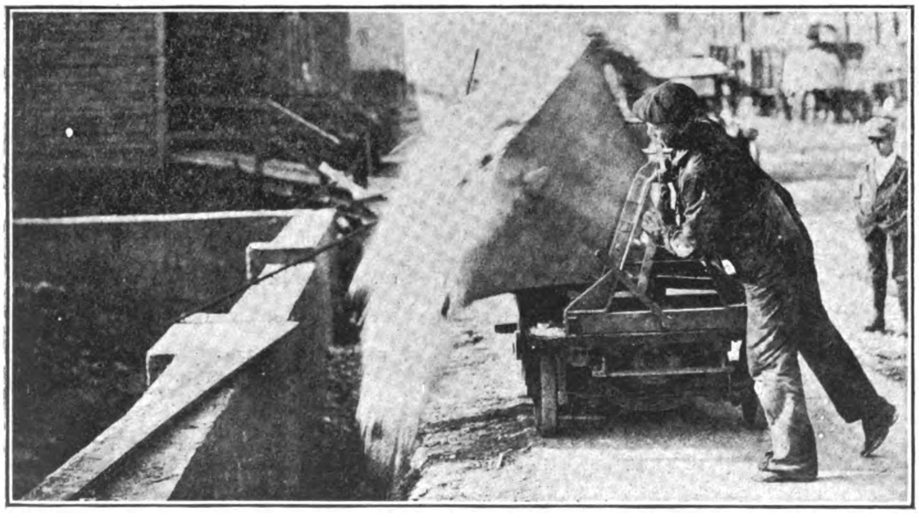
**Clinton, Ark.;** Orville Scroggin will erect a new garage and will handle accessories and supplies for Ford cars.

**Gilroy, Cal.;** Vic Poncelet will open a garage.

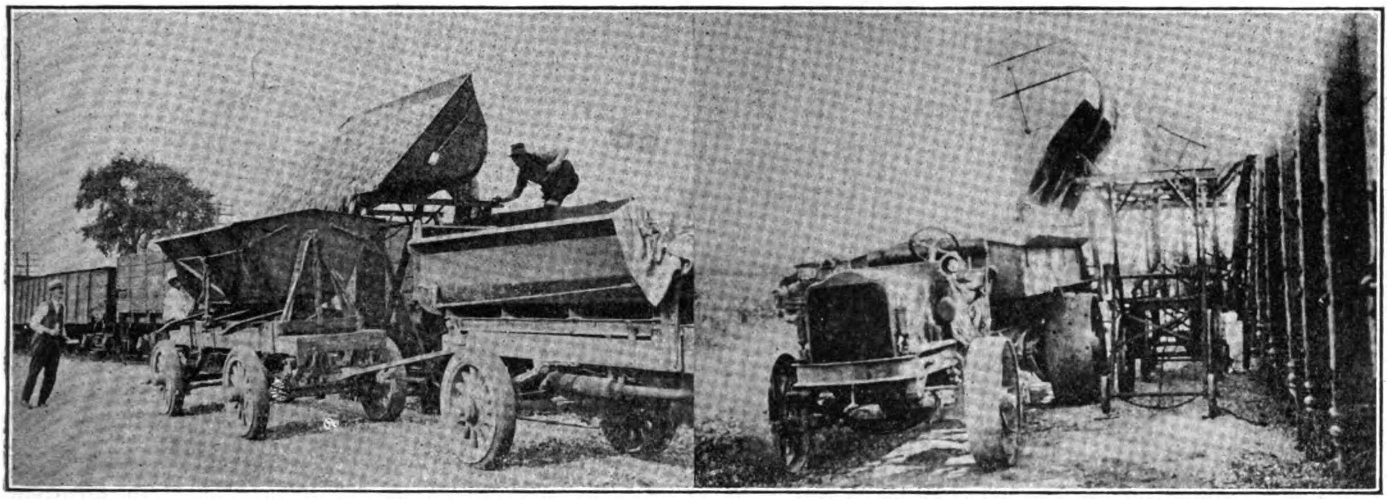
**Los Angeles, Cal.;** The Leach Motor Car Co. is planning to erect a reinforced concrete commercial garage building at the northeast corner of 16th and Figueroa streets. The building will cover an area of 150 by 165 feet.

**Alvin, Ill.;** Ingram & Ingram will occupy a new two-story building which is being erected. It will be 50 by 100 feet.

**Canton, Ill.;** Frank Dushane and John Jabine are planning the opening of a garage and repair shop in the Reynold's building.



**Large Building Contractors Are Using on Garage and Service Station Constructions the Electric Industrial Truck Equipped with 1½ Yard Lee Side Dumping Body. The Motive Unit Is of Two Tons Capacity, Driven by an Electric Motor and Power Battery. A Feature Is That the Load Is Discharged Several Feet from the Chassis. The Machine, Eight Feet Long, Four Feet Wide and High, Is Sold by the Buda Co., Railway Exchange, Chicago.**



**Combatting Freight Terminal Congestions, Contractors and Builders Who Have Occasion to Handle Large Quantities of Loose Material, Sand, Gravel, Slag, Mixed Cement, Turn to Mechanical Unloaders, Such as the Lee Equipment. The Illustration Shows the Transferring of Crushed Stone from Railroad Cars to Trucks at New Brunswick, N. J.**

**Carmi, Ill.;** Elliott & Endicott will erect a two-story garage.

**Chester, Ill.;** Artie Boedeker will open an auto supply store.

**Flora, Ill.;** Ed. Gilder is erecting a new garage.

**Kankakee, Ill.;** E. W. Griffith, Freazer building, will open a repair shop.

**Peoria, Ill.;** The Mackemer Ford agency is erecting a $60,000 building at the corner of Seventh and Franklin streets.

**West Salem, Ill.;** C. Gentz will open a garage.

**Wellsville, Kan.;** U. I. Averill is erecting a new garage.

**Bancroft, Mich.;** Royal Johnson will open a garage.

**Coleman, Mich.;** James Bittles has leased the G. A. R. building and will fit it up for a garage.

**Escanaba, Mich.;** L. K. Edwards has purchased the corner at Ludington and Wolcott streets and will erect an up-to-date fireproof garage on the site. The Ford car will be handled exclusively.

**Grand Rapids, Mich.;** Roger Mara, South Division avenue, is having plans prepared for a garage.

**Lafayette, Minn.;** Hedron & Co. will erect a 40 by 80 foot building, to be used as a garage and repair shop.

**Alliance, Neb.;** King & Smith will open a new garage.

**East Ely, Nev.;** W. R. Miller will open an auto supply house.

**Miles City, N. J.;** L. W. Stacy will erect a new $20,000 garage at Seventh and Bridge streets.

**Cohoes, N. Y.;** Fuld & Hatch Knitting Co. is having a garage and office building erected on Saratoga street.

**Lancaster, N. Y.;** Charles Long, 51 Marion street, is having a garage erected.

**Cary, N. D.;** J. W. Ebert will erect a new garage.

**Hansboro, N. D.;** Lentz Brothers and Loree will erect a new garage.

**Hamilton, O.;** A. O. Rolfe is erecting a new garage on North D street to cost $600.

**Farrell, Pa.;** Charles Leon, Greenfield avenue, is having a modern garage erected. It will be 71 by 84 feet and will be two stories high.

**Sioux Falls, S. D.;** T. G. Edmison, 322 South Phillips avenue, will erect a garage 47 by 122 feet.

**Dallas, Tex.;** McLarty Motor will open for business and will carry a full line of automobiles and accessories.

**Greenville, Tex.;** John Dennis will erect a new two-story building to be used for a garage.

**Llano, Tex.;** T. S. Parker will open a show room. He will deal in tires and accessories.

**Waitsburg, Wash.;** J. D. Moore, local agent for the Hudson and Oakland cars, is having a garage erected.

**Port Washington, Wis.;** Schmidt Bros. are planning a new garage to be 60 by 100 feet, one story.

**Taft, Cal.;** The Bakersfield Garage and Auto Supply Co. is planning to build a $20,000 garage on Fifth and North streets.

**Ogden, Ia.;** The Crossman Auto Co. has started the erection of a large addition to its garage to be used for a machine shop and heating plant. The building will be fireproof and will be 35 by 50 feet.

**Wallace, Ida.;** The Boomer Garage at Eighth and Bank streets, is nearly completed. It is fireproof. The cost of the building is $20,000.

**Chicago, Ill.;** Darling & Co. will erect a large building on the site they purchased in Ashland avenue.

**Rock Island, Ill.;** Roy Mercer will erect a fine new garage on the north side of Main street.

**Streator, Ill.;** L. C. Mulford is erecting a fine up-to-date display. He has the agency for the Roamer, Velie and Marmon lines.

**Wichita, Kan.;** The Federal Motor Co., is erecting a new two-story brick and concrete fireproof building at the corner of Third and Lawrence street.

**Boston, Mass.;** S. J. Lea is erecting a brick public garage on the Revere Beach boulevard, which will cost $25,000.

**Duluth, Minn.;** Winifred E. Higgs is planning the erection of a $20,000 garage.

**Grand Forks, S. D.;** People's Auto Co. has commenced the construction of its new $15,000 garage. The structure is to be one-story and full basement, and will have a capacity of housing about 80 cars.

**Sioux Falls, S. D.;** The Hahn-Jonas Motor Co. is erecting a large building, 44 by 88 feet, on Ninth street.

**Sioux Falls, S. D.;** Van Brunt-Overland Co. will erect a large new building to take care of its growing business.

**Port Washington, Wis.;** Schmit Brothers will erect a garage on a 120 foot lot between Washington and Pier streets.

**Rosholt, Wis.;** G. A. Gullikson will open a garage.

## Alterations, Improvements and Additions.

**Clinton, Mich.;** Clintonian Garage will build an addition to the garage.

**Elsie, Mich.;** Sheldon & Son is building an addition to the garage.

**Clarkesdale, Miss.;** Dr. William L. Gates will remodel his stables into a garage and automobile sales and display building.

**Sebring, O.;** Sebring Co. is building a new addition 80 by 40 feet to the plant.

**Woodward, Okla.;** Earl Workman is building a large addition to his garage. This addition will almost double its capacity.

**Tacoma, Wash.;** H. E. McEldowney has added two floors to his present quarters, with floor space of 24,000 square feet.

**Milwaukee, Wis.;** William F. Mortimer, 402 12th street, will build an addition to his garage.

**Brownville, Me.;** H. E. Herrick is remodeling a building to be used as a service station and sales room.

**Calumet, Mich.;** The Wieder-Cadillac Co. is having a big addition erected to its building on Sixth street. The new building will have a plate glass front and will be laid throughout with concrete flooring.

**Jackson, Mich.;** R. E. Lewis is building a two-story brick addition to his garage at 226 West Pearl street, which is to be 40 by 66 feet and wll cost $6000.

**Little Falls, Minn.;** E. A. Berg & Co. will remodel the store building of A. C. Wilson into a garage. The company handles Ford cars.

**Sturgeon Bay, Wis.;** Moeller's Garage is building an addition 30 by 60 feet, to be used for an automobile repair shop.

## Factories, Garages and Repair Shops.

**Ft. Fairfield, Me.;** F. A. Doran is erecting an up-to-date sales and service station to be devoted to Ford cars. It will cost $6000.

**Houghton, Mich.;** James McClure, agent for Ford and Buick cars, is planning the erection of a big three-story concrete building on Sheldon street, West Houghton.

**Jackson, Mich.;** F. H. Levingwood is erecting a 20 by 24 foot frame garage at Bennett street.

**St. Joseph, Mo.;** William G. Fairleigh and Fred H. Chambers are planning to build an up-to-date garage and service station to be known as the "Auto-Torium."

**Dewitt, Neb.;** Claude Wheeler is planning the erection of a new garage.

**New York, N. Y.;** Moore & Landsiedel will erect a seven-story garage at the north corner of Riverside drive and 134th street.

**New York, N. Y.;** Lazarus Rosenber will erect a garage on the southeast corner of Fourth avenue and 51st street. It will be four stories.

**Tulsa, Okla.;** The Sleeper Motor Co. is erecting a 100 by 140 foot garage and sales room on the east side of Main street.

**Port Arthur, Tex.;** T. E. Linn is planning the erection of a $22,000 garage to measure 100 by 140 feet.

**Adell, Wis.;** P. H. Slattery will erect a garage 44 by 100 feet.

**Brandon, Wis.;** Frank N. Humphrey will erect a garage.

# TRADE INFORMATION EXCHANGE

## A National Clearing House for the Trade's Needs

### GASOLINE PLEASURE CARS.

**Chateaugay, N. Y.;** Sprague Garage Co. is in the market for pleasure cars; selling price, $400 to $600.

**Johnstown, Pa.;** Masters Tire Service, Conemaugh and Walnut streets, is anxious to secure the agency for gasoline pleasure cars; selling price, $500 to $950.

**Spokane, Wash.;** The Snyder Motor Car Co., 1201-1203 First avenue, is interested in gasoline pleasure cars; selling price, $650 to $1000.

### GASOLINE COMMERCIAL CARS.

**Chateaugay, N. Y.;** Sprague Garage Co. would like to secure the agency for commercial cars; selling price, $400 to $600.

### ACCESSORIES, EQUIPMENT AND SUPPLIES.

**Boulder, Col.;** W. S. Withers, 12th and Walnut streets, is in the market for bodies (for Fords), brakes (for Fords), fenders (for Fords), gears (four to one, for Fords), oils, paints, pistons (Ford oversize), racks (tires), reamers, recording time clocks (for Fords), solder, special bodies for commercial cars. The goods are for retail trade.

272963 MILES
HYATT

Hyatt Roller Finishes Trip.

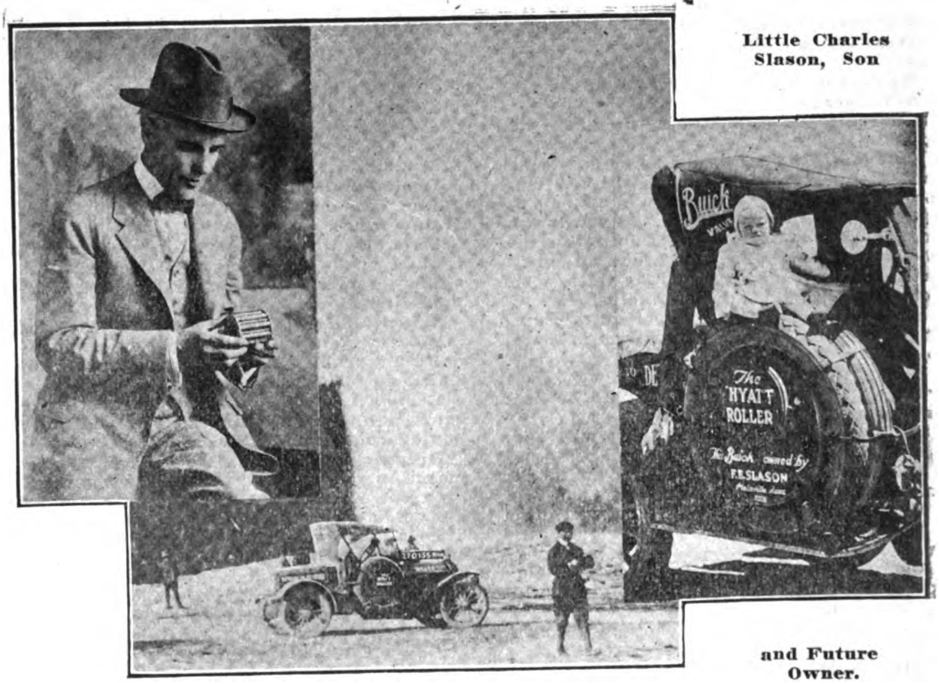
**Decatur, Ill.;** Commonwealth Garage Co. wishes to obtain the following: Anti-rattlers, batteries, bodies, bulbs, bumpers, carburetors, chains, charging apparatus, curtains, cushions, dimmers, engines, fenders, fire extinguishers, gasoline, gauges, generators, goggles, graphite, guns, hammers, headlights, heaters, horns, ignition, jacks, lamps, locks, magnetos, maps, mechanical starters, motors, mufflers, nuts, paints, patches, plugs, polishes, pumps, radiators, reflectors, removers (carbon), rims, rubber, searchlights, seats, shock absorbers, soaps, sockets, speedometers, springs, starters, storage systems, switches, tanks, tape, tire accessories, tires, tools, tops and parts, trunks, upholstery, voltmeters, vulcanizers, waste, wearing apparel, wheels, whistles, windshields, wrenches and special bodies for pleasure and commercial cars. The goods are to be used for sale.

**Chateaugay, N. Y.;** Sprague Garage Co. is interested in air compressors, batteries, brakes, bulbs, bumpers, carburetors, charging apparatus, cranes, dimmers, drills, fire extinguishers, gauges, goggles, headlights, hoists, jacks, lamps, magnetos, maps, packing, pistons, plugs, polishes, pumps, ratchet drills, removers (carbon), searchlights, shock absorbers, soaps, tape, testers, tire accessories, tires, washers, washstands, waste, wearing apparel, wrenches.

**Cincinnati, O.;** East Walnut Hills Garage Co., Grandin road and Freeland avenue, is anxious to secure arbor presses, bulbs, charging apparatus, dimmers, headlights, hoists, hydrometers, jacks, polishes, soaps, washstands, waste and prices on polishing rags.

**Defiance, O.;** The Turnbull Motor Truck and Wagon Co. is in the market for axles, batteries, bearings, cable, cans, carburetors, clutches, cushions, dashes, fasteners, fenders, forgings, frames, glass, horns, ignition, jacks, joints, lamps (oil), levers, magnetos, motors, mufflers, pans, plugs, radiators, speedometers, springs, stampings, steel, tanks, tires, tools, transmission, wheels, whistles, windshields, wrenches.

**Spokane, Wash.;** The Snyder Motor Car Co., 1201-1203 First avenue, is in the market for bumpers, plugs, springs. The goods are to be used for sale.


Buick
The HYATT ROLLER
The Buick owned by F.E. SLASON

Little Charles Slason, Son

and Future Owner.

The Hyatt Roller at the Big Geyser, Yellowstone Park. Upper Insert, F. E. Slason of Plainville, Kan., Owner of the Buick Car.

### HYATT ROLLER HOME FROM 12,000 MILE TRIP.

The famous Hyatt Roller returned home amid great merry making and festivities. The little Buick car rolled into Detroit at 10:30 a. m. Oct. 5, turning off its 272,963d mile on its original Hyatt Roller bearings.

The Hyatt Roller is a model 16 Buick, purchased by F. E. Slason in 1909, of Plainville, Kan., and will be given to his son, he says, when the boy becomes a driver. A little more oil on the bearings and it could be started out again, no adjustments required.

### MICHIGAN STORAGE BATTERIES DESIGNED FOR FORD CARS.

Announced in this issue is the specially designed storage battery being marketed by the Michigan Storage Battery Co., 67 Atwater street, East, Detroit, Mich. It has many points which make it especially commendable for use on the Ford car. It is convenient in shape and easy to install, fitting under the seat, out of the way and concealed from view. Its advantages over the use of dry cells or lighting from the magneto are apparent.

Its use avoids the necessity of mounting an expensive steel box on the running board, where it is not only in the way, but unbalances the car. The Michigan battery is made in three different sizes, as follows: No. F. 96, six volts, 70 amperes, $15.30; No. F. 116, six volts, 90 amperes, $17.85; No. F. 136, six volts, 110 amperes, $20.40.

### NEW AGENCIES FOR KOEHLER 1¼-TON MOTOR TRUCK.

The H. J. Koehler Motors Corp., Newark, N. J., have appointed the following new agencies for the Koehler 1¼-ton truck: King Sales Co., 723 Granby St., Norfolk, Va.; Nickerson & Schroeder, Inc., 1078 Bedford Ave., Brooklyn, N. Y.; Hoagland & Thayer, Inc., 300 Washington St., Newark, N. J.

### MACLEOD COMPANY IS EXPANDING ITS PLANT.

The MacLeod Co., Cincinnati, O., makers of sand blast equipment and metallurgical furnaces, have enlarged their plant to handle the increased volume of business and the company's capital has been increased to $100,000 to provide additional capital requirements.

# AGENCIES RECENTLY APPOINTED.

Add to and Correct Your Mailing List of Pleasure Car and Other Dealers—Symbol * Indicates Commercial Vehicle. † Electric Vehicle.

### ARKANSAS.

**Little Rock**—*Koehler, Evatt & Widsor, 614 Louisiana street.

### CALIFORNIA.

**Pasadena**—King, Miller & Price.
**Sacramento**—Haynes, Rice & Forest.
**San Francisco**—Lexington, Good Motor Co., Post street.
Paige, The Paige Motor Co., Van Ness avenue and Sacramento street.
*Bethlehem, F. O. Renstrom Co.

### COLORADO.

**Denver**—Stephens Salient "6," The Moore-Hardy Motor Co., 1718-20 Broadway.
**Trinidad**—Chevrolet, The Weaver & Richards.

### CONNECTICUT.

**Hartford**—Mitchell, The Palace Auto Service Co., 348 Trumbull street.

### GEORGIA.

**Sylvester**—KisselKar, T. S. & W. E. Jeanes.
**Thompson**—KisselKar, A. D. Adkins.

### IDAHO.

**Buhl**—KisselKar, Buhl Auto Co.

### ILLINOIS.

**Belleville**—Saxon, Washington Porter.
**Chicago**—Woods (dual power) Veeder & Simonson.
**Frankfort**—Dort, Frankfort Auto Co.
Oldsmobile, Frankfort Auto Co.
**Monee**—Ford, Edward Backus.
**Murdock**—King, R. Y. McIntyre.
**Pana**—Paige, The Ricks Motor Sales Co.
**Peoria**—KisselKar, Crescent Auto Co.

### INDIANA.

**Ft. Wayne**—Hupmobile, The Hanke Motor Car Co., 726-28 Barr street.
**Indianapolis**—Interstate, C. H. Biebe, 328-330 N. Delaware street.
**Monticello**—Hudson, The Taylor Auto Co.
**South Bend**—Saxon, The Superior Motor Sales Co.
**Sullivan**—Mitchell, E. S. Crouder.
**Terre Haute**—Chalmers, The Giffel Sales Co., 845 Lafayette street.

### IOWA.

**Burlington**—Cole "8," The Cole Automobile Co.
**Cedar Rapids**—Saxon, John Chandler and W. H. Borchell.
**Council Bluffs**—Packard, Packard Iowa Motors Co., 1314 Locust street.
*Stewart, The Jones Motor Sales Co., 34 North Main street.
**Des Moines**—*Federal, The Mackie Motor Co., 1421 Locust street.
**Ft. Dodge**—King, H. V. Julius & Co., 812 First avenue.
**Perry**—Ford, The Rude Auto Co.

### KANSAS.

**Concordia**—Maxwell, Gardner & Duff, 105-107 West Seventh street.
Velie, Gardner & Duff, 105-107 West Seventh street.
**Smith Centre**—Maxwell, Art Tucker (Maxwell Garage.)

### LOUISIANA.

**St. Joseph**—Mitchell, Charles E. Wilds.

### MASSACHUSETTS.

**Worcester**—Elgin, C. A. Lations.
Maxwell, J. W. Sargent & Son Co.
Mitchell, F. S. Howard Motor Car Co., 746 Main street.
Mercer, The Putman & Winto, 709 Main street.
*Jeffery, C. A. Lations, 148 Green street.
*Indiana, C. A. Lations, 148 Green street.
*Koehler, C. A. Lations, 148 Green street.
*Nash, C. A. Lations, 148 Green street.
*Rush, C. A. Lations, 148 Green street.

### MICHIGAN.

**Bay City**—Olympian, J. P. Warfield & Barbcock.
**Birmingham**—Mitchell, Valentine & Smith.
**Escanaba**—Cadillac, E. O. Anderson.
Hudson, The Delta Garage, Ludington street.
**Harbor Beach**—Mitchell, Thomas Hamlin.
**Marquette**—Hudson, The Cloverland Auto Co.
**St. Joseph**—King, Thos. B. Enery, 204 Main street.

### MINNESOTA.

**Duluth**—Marmon, G. D. Whiteside & W. R. Whiteside.
King "8," The King Eight Motor Car Co., Third avenue E.
**International Falls**—Ford, C. W. Jewett, Grand Theatre building.
**Minneapolis**—Olympian, The Olympian Motor Sales Co., 1114 Hennepin avenue.
**Virginia**—Overland, J. F. Ackland.

### MISSISSIPPI.

**Carter**—Mitchell, J. A. Jordan.

### MISSOURI.

**Kansas City**—Olympian, The Hull Motor Car Co., Coca Cola building.

### NEBRASKA.

**Alliance**—Hudson, F. L. Smith & Martin 216 W. Third street.
Overland, F. L. Smith & Martin King, 216 W. Third street.
**Havelock**—Briscoe, N. N. Manners.
**Quincy**—Hudson, Morris Adler Co., Vermont street.

### NEW JERSEY.

**Lumberton**—*Koehler, G. J. Cooney (Lumberton Garage).
**Newark**—Stanley Stearn, C. Schmidt, 238 Central street.
**Sommerville**—*Koehler, J. C. Henry.
**Wildwood**—*Koehler, The Motor Shop.

### NEW YORK.

**Albany**—Maxwell, The Berkshire Motor Car Co.
**Fulton**—Jeffery, Glenn D. Trimble.
Nash, Glenn D. Trimble.
**Hamilton**—Chevrolet, E. C. Still.
**Kingston**—*Koehler, The Kingston Taxicab Service.
**New York**—Maxwell, R. B. V. Motor Sales, 565-7 Fortham road.

### NORTH CAROLINA.

**Ayden**—King, Eure Motor Co.
**Clinton**—Mitchell, F. B. Johnson & Co.

### OHIO

**Athens**—King, F. G. Phillips.
**Coshocton**—Mitchell, Crouthers Auto Sales Co.
**Cleveland**—Jordan, The Jordan Ohio Co., 1834-36 E. 13th street.
KisselKar, Heath Motor Co., 1610 Euclid avenue.
**Elyria**—Marmon, The Harrison Motor Co.
Oakland, The Harrison Motor Co.
**Gallipolis**—Mitchell, J. T. Mitchell.
**Lawson**—King, D. E. Davis.
**Lorain**—Buick, The Lorain Buick Co., North Broadway.
Olympian, Waldo E. Purcell.
**Marietta**—King, J. C. Davis.
**Middletown**—*United States, Hiram Clark.
**Toledo**—†Rauch & Lang, Kellam & J. McDowell.
Mitchell, Roberts Toledo Auto Co.
**Urbana**—Allen, J. A. Shultz, North Main and Church streets.

### OKLAHOMA.

**Shawnee**—Overland, The Warren Smith Hardware Co.
Oldsmobile, Griffin & Robb, North Broad street.
**Tahlequah**—Overland, Hudson Furniture and Hardware Co.

### OREGON.

**Enterprise**—King, Fred Ashley.

### PENNSYLVANIA.

**Clearfield**—*Koehler, H. D. Healey.
**Kittanning**—KisselKar, Frank L. Fries.
*Koehler, Harvey Ellermeyer.
**Lancaster**—King, Lefere & Muller, Lime and New streets.
**New Bethlehem**—Mitchell, H. H. Drohm.
**Oil City**—Mitchell, General Motor Sales Co., 208 East Second street.
**Philadelphia**—Briscoe, The Grieb & Thomas Co., 306 N. Broad street.
King, Charles T. Parker, 518 N. Broad street.
Velie, La Roche Brothers, 1214 N. Broad street.
*Velie, La Roche Brothers, 1214 N. Broad street.
Velie Tractor, La Roche Brothers, 1214 N. Broad street.
**Reading**—King, Hassler Auto Co.
*Koehler, The Reading Engineering Works, 116 Washington street.
**Sharon**—Mitchell, The Shenango Valley Auto Co., 22 Chestnut street.
**Wrightsville**—*Koehler, H. E. Bailey.

### RHODE ISLAND.

**Newport**—Mitchell, The Marlborough Garage.
**Providence**—Chandler, The Chandler Motors of Rhode Island, 13 Bradford street.

### SOUTH CAROLINA.

**Barnwell**—Mitchell, Mitchell Motors Co.
**Bishopville**—Mitchell, W. M. Reid.
**Clinton**—*Koehler, S. Y. Adair.

### TENNESSEE.

**Memphis**—Interstate, W. B. Hanger.
Premier, W. B. Hanger.

### UTAH.

**Salt Lake City**—Jordan, Merced & Jordan Sales Co.

### WASHINGTON.

**Seattle**—Harroun, Elgin Sales Co., 422-26 St. Helene avenue.
**Spokane**—Briscoe, Standard Motor Car Co., W. 1523 First avenue.
Doble, Standard Motor Car Co., W. 1523 First avenue.
KisselKar, Standard Motor Co., W. 1523 First avenue.

### WEST VIRGINIA.

**Charleston**—Mitchell, J. J. Pittman.
**Wheeling**—KisselKar, International Rubber Sales Co.
**Williamson**—King, The Acme Construction Co.

# Securities and General Materials Markets

## Automobile Securities Quotations

| | Sept. 13 | | Oct. 11 | |
|---|---|---|---|---|
| | Bid | Asked | Bid | Asked |
| Ajax Rubber Co | 60 | 62½ | 59 | 62 |
| J. I. Case T. M. Co., pfd | 75 | 83 | 80 | 82 |
| Chalmers Motor Co., com | 7 | 10 | 2 | 5 |
| Chalmers Motor Co., pfd | .. | .. | .. | .. |
| Chandler Motor Co | 79½ | 80 | 72 | 76½ |
| Chevrolet Motor Co | 65 | 71 | 76 | 79 |
| Fisher Body Corp., com | 31 | 38 | 25 | 35 |
| Fisher Body Corp., pfd | 86½ | 90 | 86 | 87½ |
| Fisk Rubber Co., com | 65 | 70 | 60 | 65 |
| Fisk Rubber Co., 1st pfd | 104 | 106 | 102 | 105 |
| Fisk Rubber Co., 2nd pfd | 92 | 95 | 90 | 95 |
| Firestone Tire and Rubber Co., com | 116 | 120 | 106 | 110 |
| Firestone Tire and Rubber Co., pfd | 102½ | 104½ | 100 | 103 |
| General Motors Co., com | 96¼ | 96¾ | 94¼ | 94¾ |
| General Motors Co., pfd | 82 | 87 | 77¼ | 78¾ |
| B. F. Goodrich Co., com | 46 | 47 | 42½ | 44 |
| B. F. Goodrich Co., pfd | 101 | 106 | 100 | 103 |
| Goodyear Tire and Rubber Co., com | 186 | 190 | 174 | 176 |
| Goodyear Tire and Rubber Co., pfd | 101 | 105 | 100 | 102 |
| Grant Motor Car Corp | 3 | 5 | 2 | 4 |
| Hupp Motor Car Corp., com | 2½ | 3½ | 2½ | 3½ |
| Hupp Motor Car Corp., pfd | 80 | 85 | 82 | 88 |
| International Motor Co., com | 13 | 15 | 8 | 12 |
| International Motor Co., 1st pfd | 58 | 61 | 20 | 40 |
| Kelly-Springfield Tire Co., com | 44 | 44½ | 41 | 43 |
| Kelly-Springfield Tire Co., 1st pfd | 87 | 95 | 85 | 90⅛ |
| Lee Rubber and Tire Corp | 18½ | 20½ | 17 | 18 |
| Maxwell Motor Co., Inc., com | 31¼ | 32 | 32⅝ | 34½ |
| Maxwell Motor Co., Inc., 1st pfd | 66 | 67 | 65 | 67 |
| Maxwell Motor Co., Inc., 2nd pfd | 18½ | 20 | 19¼ | 20 |
| Miller Rubber Co., com | 175 | 180 | 170 | 175 |
| Miller Rubber Co., pfd | 102 | 104 | 100 | 102 |
| Packard Motor Car Co., com | 142 | 152 | 143 | 148 |
| Packard Motor Car Co., pfd | 96 | 99 | 94 | 98 |
| Paige-Detroit Motor Car Co | 24 | 26 | 23 | 25 |
| Peerless Truck and Motor Corp | 13 | 15 | 7 | 13 |
| Portage Rubber Co., com | 140 | 150 | 122 | 125 |
| Regal Motor Car Co., pfd | 14 | 20 | 15 | 20 |
| Reo Motor Car Co | 26 | 27 | 24 | 25¼ |
| Saxon Motor Car Corp | 13 | 14½ | 12 | 13 |
| Springfield Body Corp., com | 1 | 6 | .. | .. |
| Springfield Body Corp., pfd | 8 | 18 | .. | .. |
| Standard Motor Construction Co | 8¾ | 9 | 9 | 10 |
| Stewart-Warner Speed. Corp | 57½ | 58½ | 62½ | 63½ |
| Studebaker Corp., com | 43¾ | 44 | 33½ | 34½ |
| Studebaker Corp., pfd | .. | 96 | .. | 90 |
| Swinehart Tire and Rubber Co | .. | 60 | 40 | 45 |
| United Motors Corp | 19¼ | 19¼ | 21⅛ | 22 |
| U. S. Rubber Co., com | 60¾ | 61 | 57¼ | 58 |
| U. S. Rubber Co., pfd | 105 | 106 | 101⅛ | 102 |
| White Motor Co | 45 | 46 | 41 | 42 |
| Willys-Overland Co., com | 27½ | 27¾ | 24⅞ | 25 |
| Willys-Overland Co., pfd | 88 | 92 | 87¼ | 94 |
| Wright-Martin | .. | .. | 10⅝ | 9¾ |

## General Market Prices

| | Sept. 14 | Oct. 10 |
|---|---|---|
| Iron, foundry, S., ton | 49.90 | 50.00 |
| Iron, foundry, N., ton | 47.00 | 47.00 |
| Steel, Bessemer, ton | 90.00 | 60.00 |
| Iron, Bessemer, ton | 52.70 | 54.00 |
| Copper, electric, 100 lbs | 26.50 | 23.50 |
| Copper, lake, 100 lbs | 27.00 | .... |
| Lead, 100 lbs | 9½ | 8 |
| Tin, 100 lbs | 62½ | 58½ |
| Petroleum, Kan., cr, bbl | 2.00 | 2.00 |
| Petroleum, Pa., cr., bbl | 3.50 | 3.50 |
| Linseed oil, raw | 1.20 | 1.16 |
| Lard oil, prime | 1.88 | .... |
| Fish oil, Menhaden, br | 84 | 92 |
| Sulphuric acid, 60 | .... | .... |
| Cottonseed oil, bbl | 16.40 | 19.00 |
| Silk, raw, Italy | .... | .... |
| Silk, raw, Japan | 6.60 | 6.12½ |
| Rubber, fine, up-river, Para | 69½ | 65½ |
| Tire, scrap | 6½ | 6¼ |
| Steel, open hearth, ton | 90.00 | 60.00 |

### DOMESTIC CRUDE OIL PRICES.

The prices of crude petroleum at the wells during the middle of the month of October were:

| | | | |
|---|---|---|---|
| Pennsylvania dark | $3.50 | Corsicana light | $1.90 |
| Mercer black | 2.22 | Corsicana heavy | 1.05 |
| Cabell | 2.57 | Electra | 2.00 |
| New Castle | 2.10 | Henrietta | 2.00 |
| Corning | 2.60 | Caddo, La., 38° | 2.00 |
| Wooster | 2.38 | Caddo, La., heavy | 1.00 |
| North Lima | 2.08 | Healdton | 1.20 |
| South Lima | 2.08 | Moran | 2.00 |
| Indiana | 1.98 | Strawn | 2.00 |
| Princeton | 2.12 | De Soto | 1.90 |
| Somerset 32° | 2.40 | Thrall | 2.00 |
| Ragland | 1.10 | Crichton | 1.50 |
| Illinois above 30° | 2.12 | Canada | 2.48 |
| Kan. & Okla | 2.00 | Humble | 1.00 |
| Plymouth | 2.03 | Cal., 37 grav | 1.32 |

### Naphtha.

| | 10-gal. drums | |
|---|---|---|
| | Under 100 cases | 100 cases and over |
| Benzine, 59-62° | 38 | 37½ |
| Stove | 38¼ | 37¾ |
| Auto, 68-72° | 48¾ | 43¼ |
| Naphtha, 73-76 | 47¾ | 47¼ |

| | In cans and cases | | |
|---|---|---|---|
| | Under 100 | 100-199 | 200-299 |
| Benzine, 59-62° | 33½ | 33¼ | 33¼ |
| 73 a 76° | 43 | 43¼ | 42½ |
| Stove | 32¾ | 33¾ | 32¼ |
| Auto, 68-72° | 39 | 38¾ | 38½ |

### NEW YORK CITY PRICES.

New York City prices for petroleum and its products were:

**Petroleum.**

| | | | |
|---|---|---|---|
| Crude, barrels, a gallon | 15a18 | Fuel, 31° | 10½ |
| Refined barrels | 18 | Fuel, 34° | 11 |
| Tank wagons delivery | 9 | | |

**Naphtha.**

| | | | |
|---|---|---|---|
| Garages | 24 | V. M. & P. deod., in steel | 23 |
| Consumers | 26 | V. M. & P. deod., in wood | 26 |

**Gasoline.**

| | | | |
|---|---|---|---|
| Gas machine, steel | 41 | 68-72° steel | 32 |
| 72-76° | 38 | 68-72° wood | 28 |
| 72-76° wood | 38 | | |

## Foreign Trade Opportunities

(Address Bureau of Foreign and Domestic Commerce, Washington D. C., Giving Number, Which Will Forward Correspondence, Unless Otherwise Stated.)

25,412. A man in Switzerland is in the market for automobiles for shipment after the war. Correspondence may be in German or French.

25,460. A firm in France wishes to secure an agency on a commission basis for the sale of agricultural machinery, textile machinery, automobiles and accessories, office furniture and fixtures and household furniture. References. The firm has a branch in the United States.

25,528. A man in Portugal wishes to buy automobile accessories. He also desires to secure an agency for the sale of these goods. Quotations should be made f. o. b. American port. Credit will be opened in New York for payment. Correspondence should be in French. References.

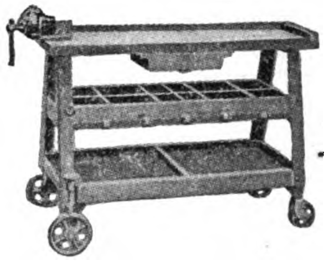
25,540. A representative of a firm in Ecuador, who will be in the United States for about one month, desires to purchase or secure agencies for the sale of earthenware lavatories and water closets, electrical goods, electric lamps for automobiles and house purposes, motor boats, automobile supplies, lubricating oils and greases. Quotations should be made f. o. b. New York. Payment will be made by cash in New York or credit terms. Correspondence may be in English. References.

25,564. An agency is desired by a man in France for the sale of automobiles, trucks and accessories and machine tools. Payment will be made against documents. Correspondence should be in French. Catalogues should be submitted. References.

BRUNNER MFG. CO.
UTICA, N.Y. U.S.A.

Brunner Air Compressor Outfit.

# GARAGE EQUIPMENT



United Engine Portable Bench.

## STEVEN'S SERVICE CABINETS.

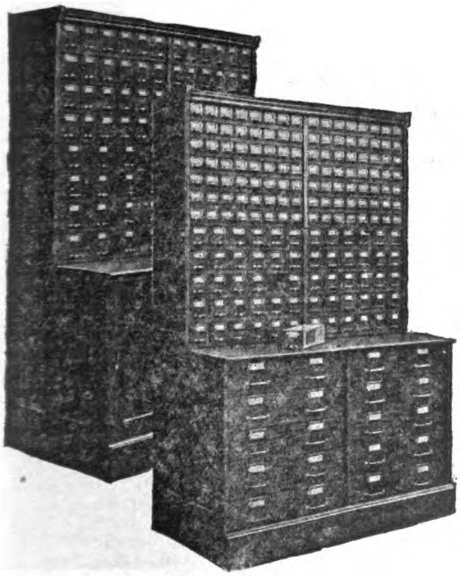
Nothing leaves such a lasting and favorable impression upon the accessory buyer as quick service, in fact, service may well be said to be the key to success. To facilitate service, accessories and parts must be conveniently located and kept in order. Many sales are lost because the dealer has forgotten where the part in question was located. To systematize the parts stock the Stevens service cabinets have been designed. Practically any combination of units may be assembled so that the dealer has a place for every part.

The cabinets illustrated show two possible and useful combinations of Stevens' units. The combination in the front is made up of three units and a top. The top units contain 172 small and medium sized drawers, which will hold small stock parts and bolts. The lower is fitted with 20 large sized drawers, which are suitable for larger and heavier parts, accessories or tools.

The combination in the rear is made up of three units, the two upper being the same as those in front. The lower section is fitted with doors and a shelf upon which may be stacked larger and heavier parts, such as cylinders, crankshafts or transmission parts.

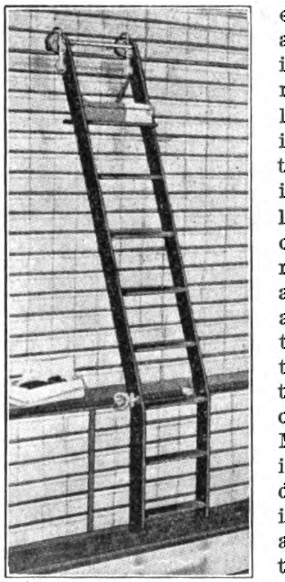
All of the draws are covered with heavy galvanized steel and may be fitted with compartments and cross divisions as desired.

**Manufactured by Stevens & Co., 375 Broadway, N. Y. Write for catalogue of cabinet units.**



Stevens Service Cabinets.

## MILBRADT STEP LADDERS.



In a garage, supply station, accessory store or stock room it often happens that many of the articles frequently used are packed high upon the shelves or in drawers, which are above reaching distance. A rolling step ladder such as is shown in the illustration is an extremely handy part of the equipment and fully as important as the shelves themselves, if the saving of time is any object. The Milbradt rolling step ladders are made in many styles and to fit practically any shelf or drawer arrangement. They are made to order of hard wood lumber (usually oak), nicely finished with suitable fixtures at the top and to run on either steel or wood track.

They may be had to roll on the floor or against the side of the shelves, and it is said that a slight push will propel a ladder the length of an ordinary store, even with the operator on it.

Two styles of track are used, wood upon which rolls iron wheels, or steel track upon which rolls paper filled wheels. In either case the fittings are so arranged that the wheels cannot jump the track.

**Manufactured by Milbradt Manufacturing Co., St. Louis, Mo. Write for prices, giving sketch and dimensions of ladder required.**

## TIRE INFLATER OUTFIT.

An automatically operated tire inflater tank outfit has just been developed which should be of interest to every garage man and repair shop. The outfit consists of a tank mounted upon an iron base and fitted with compressor, indicator and automatic switch.

Immediately upon making the electrical connection the motor is started and air is pumped into the tank until a pressure of 150 pounds per square inch has been reached, then the automatic pressure switch comes into action and stops the machine.

To inflate a tire the Romort air chuck on the end of the hose is pressed over the tire valve and the pressure in the tire will rise instantly, it is claimed, to any number of pounds desired.

When enough air has been used to cause the pressure in the tank to drop to 120 pounds, the automatic switch starts the device and brings the pressure back to 150 pounds.

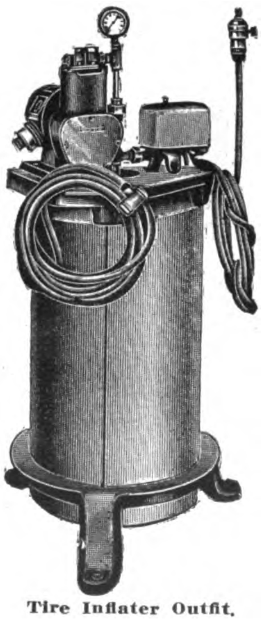
After the first electrical connection has been made the machine requires no further attention, beyond that of oiling and cleaning, since its operation is entirely automatic.

Attention is called to the fact that the device has no exposed mechanism, electrical or mechanical, all of the units being enclosed in casings, so that it is impossible for anyone to be injured through coming in contact with moving armatures, gears, rods or shafts.

A cover is furnished for the automatic switch, which completely encloses all mechanical and electrical parts. These machines can be used on 110 volt circuits, direct or alternating current of from 25 to 60 cycles.

The Northern Electric Co., Ltd., are exclusive Canadian distributors for the complete line.

**Manufactured by the Black & Decker Mfg. Co., 304 Water St., Baltimore, Md. Write for prices and catalogue of complete line.**



Tire Inflater Outfit.

## PORTABLE AIR TANK AND PUMP.

A very complete, compact and handy outfit for garage men and dealers is the new portable air tank and pump recently put on the market under the name of Black & Decker Portable Air Tank and Pump.

A substantial air tank, fitted with a No. 2 Lectroflater air pump is mounted on a strong cradle base, supported by two large wheels and one swivel caster.

To the compressor platform is attached a convenient pushing handle, making the outfit very handy to steer and manage. The wheels are fitted with rubber tires for use on hard wood or tiled flooring.

When the air has been exhausted from the tank it may be wheeled to the nearest electrical connection, connected and left to fill itself. An automatic cut out arrangement breaks the electrical connection when proper pressure is reached.

One of the advantages claimed by its manufacturers for this outfit is that its piping and vital parts are thoroughly protected against injury.

**Manufactured by the Black & Decker Manufacturing Co., 304 Water St., Baltimore, Md. Write for prices and literature.**

## VENTURA EXHAUST FAN.

In the summer time when the weather is hot and stifling the garage should be fully ventilated. In the winter time, when the windows and doors must be kept closed and the air is filled with exhaust gases from the running engines, ventilation is essential.

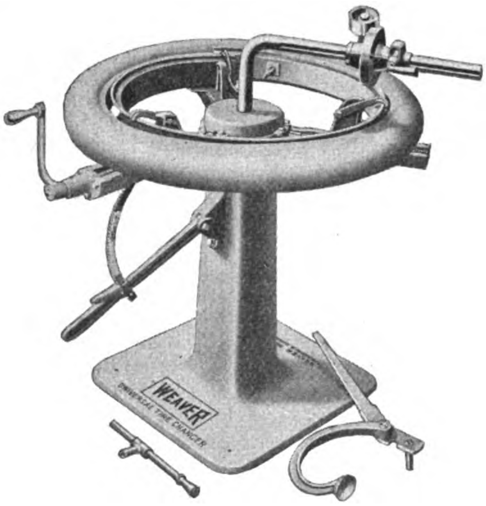
The Sprague Electric Ventura Exhaust Fan is designed to run on 115, 230 or 550 volt direct current circuit, and is self contained, having motor and fan mounted on the same frame. The frame is circular in shape and may be bolted to the partition. These fans consume but very little current in proportion to their size and should prove a practical installation for any automobile repair shop or garage.

**Manufactured by Sprague Electric Works, 527-531 W. 34th St., New York, N. Y. Write for prices.**

DIXON'S GRAPHITE Automobile LUBRICANTS
HELP YOU HELP YOUR CAR
PROPER LUBRICATION FOR YOUR AUTOMOBILE
DIXON'S GRAPHITE AUTO LUBRICANT
JOSEPH DIXON CRUCIBLE COMPANY, JERSEY CITY, N.J.

Dixon Counter Display.

Portable Air Tank and Pump.



Weaver Tire Changer.

## ELMORE DRILL.

The new Elmore Drill is essentially a high speed machine with four speed changes from 626 to 2286 revolutions per minute. To attain the necessary high speeds without damage, to insure durability, to obviate the necessity of frequent oiling and bring friction down to the lowest limit, it has been found advantageous to use ball bearings throughout. This feature, together with the scientific arrangement of supporting pulleys for the belt drive, provides ample power to drive high speed drills of 29/32 inch to the limit of their cutting edge capacity, and to do counter boring, facing and tapping operations with a minimum amount of power.

The spindle is bored with No. 2 Morse taper holes and adjustment can be made to exactly counter balance it or automatically retain it at any position. Positive depth stops are mounted on each spindle quill within easy reach of operator.

**Manufactured by the Standard Mfg. Co., Bridgeport, Conn. Send for descriptive literature and prices.**

## THE WEAVER TIRE CHANGER.

Many garages and repair shops throughout the country make a business of changing tires either free to customers or at a set rate. The changing of one difficult tire will take away the profit derived from many other changes and occupy much time. The Weaver Universal Tire Changer is a device designed for the rapid changing or mounting of tires. With it the time for changing quick detachable rim tires, split rim mountings or clincher tires, is reduced to a minimum. The changing operation is entirely mechanical and the device is so arranged that but minimum strength is required.

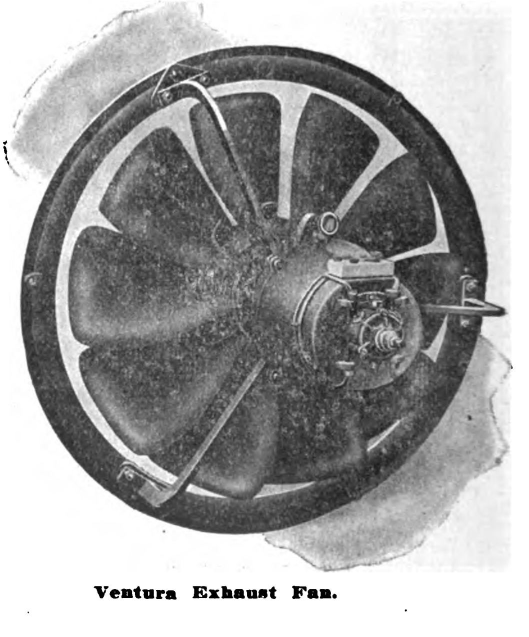
The manufacturers claim that there is no damage to tire hazard present since all of the pressure is brought upon the tire by means of roller contact.

**Manufactured by Weaver Manufacturing Co., Springfield, Ill. Write for descriptive literature and prices.**

## DIXON COUNTER DISPLAY.

A new and attractive counter display is being sent out by the Joseph Dixon Crucible Co. to enable the dealers to sell more of Dixon's lubricants. The rack is of metal and enameled in red and black. On the back, for use by the dealers and salesmen, is a chart showing the various uses of the different kinds of lubricants. On the front are spaces for displaying booklets and glass jars containing samples of the lubricants.

**All dealers that may be interested in obtaining one of these racks are requested to write to the Joseph Dixon Crucible Co. of Jersey City, N. J., Dept. H.**



Ventura Exhaust Fan.

# ACCESSORIES AND EQUIPMENT

### MARTIN TIRE COVER.

When the traveling motorist is forced to replace a worn out shoe with the "spare" which he has been carrying upon the running board, he is very apt to feel that his troubles for the time being are over. If he has been far sighted enough to protect this "spare" shoe from the sun, rain, mud and dust, then he has a right to expect full service from it; if not, then he alone is to blame. The Martin Tire Cover, illustrated, is made of the best enameled drill, water proofed and said to offer perfect protection to the shoe. It is designed to fit the tire and offer not only protection, but present an attractive appearance. Tire covers are manufactured by this firm for use on "spares" that are carried on demountable rims. Specifications furnished upon request.

**Manufactured by the Martin Mfg. Co., Lancaster, O. Price for Ford Tire Covers, $1.75. Write for prices and descriptive literature.**

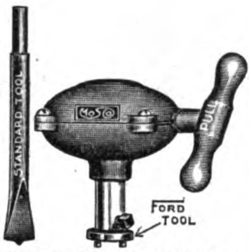
### MOSCO VALVE GRINDER.

Every repair man realizes that to get good results valves must be ground into place properly. This means that the valve be turned back and forth and complete rotations carefully avoided. This operation requires both considerable skill and much patience. To accomplish this operation the Mosco Valve Grinder has been designed. The workings of this device is extremely simple. As the larger part of the grinder is held in place the handle at the side, which is attached to a chain coiled on a pulley inside the casing, is pulled slightly. This motion imparts a rotating motion to the valve tool and the makers claim a noticeable increase in valve grinding time. The device is fitted with two tools, one standard, the other for Ford valves.

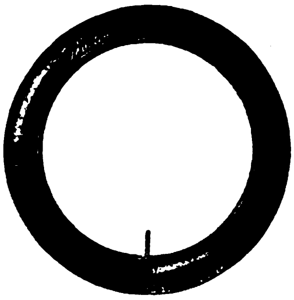
**Manufactured by Motor Specialties Co., Waltham, Mass. Price $1.75.**

### NATIONAL MIX-O-LOCK.

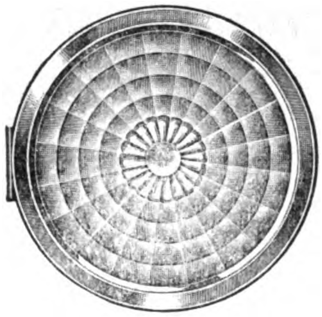
A combination auxiliary air mixer, a priming device and carburetor lock is introduced under the name Mix-O-Lock. This device consists of a gasket shaped casting which fits between the carburetor and manifold. Leading to the gasket is a long copper tube, which is carried along the exhaust manifold and through which hot air is drawn into the manifold. The amount of air may be adjusted for the best running. Fitted upon the top of the gasket is a primer plug, and when the plug is removed the excess air which is admitted effectually prevents the starting of the engine until the plug is returned.



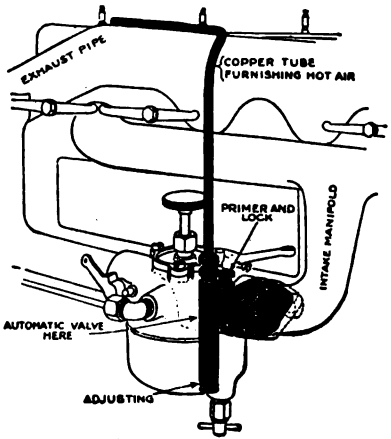
Mosco Valve Grinder.



Martin Tire Cover.



More-Lite Lens.



National Mix-O-Lock.

The manufacturers claim a gasoline saving of from 25 to 50 per cent. when this device is used, owing to the more efficient combustion of gasoline and a better mixture.

**Manufactured by the National Motor Supply Co., Painesville, O. Price $2.**

### MORE-LITE LENS.

That the widespread nuisance of glaring headlights is being suppressed by state legislation is a fact that is welcomed by the greater part of the autoing public. Headlight glare is one of the greatest evils of the automobile world, and is the direct cause of a great number of accidents. The owner riding behind his own glaring headlights is in as great a danger of collision as is the operator of other machines. Every motorist sooner or later faces the problem of equipping his car with non-glare lenses.

The More-Lite auto lens is designed to diffuse the headlight beams, to distribute the light ahead of the car where it is most needed, yet not to cause any blinding glare. This lens is made of either clear white or amber glass, highly ornamental, and for practically any size headlight.

**Manufactured by L. E. Smith Glass Co., Mount Pleasant, Pa. Prices range from $1.50 to $2.25 for clear white lenses; and from $2 to $2.75 for amber.**

### B-W DIRECT CURRENT AMMETER.

That the proper functioning of an automobile engine is directly dependent upon its electrical system, goes without saying. Only by constant attention, can the system be kept in satisfactory condition. As a watch is to a train engineer, so is the ammeter to an automobile driver. The ammeter is a check against the electrical system, and indicates just what is going on in this department, so to speak. The B-W direct current ammeters are made in both flush and surface types, and may be obtained in either nickel or black rubberoid finish.

The makers claim that car vibration does not effect the meter reading, and that due to the large permanent magnet and other design, the device holds the zero position exceptionally well.

**Manufactured by Ballman-Whitten Mfg. Co., 2867 Gravois Avenue, St. Louis, Mo. Price $1.90.**

## SILCO GEAR GREASE.

Steam cylinder oil has long been recognized by experts as the ideal lubricant for gears, bearings, etc., but considerable difficulty has been experienced with leakage, due in part to its sensitiveness to temperature changes when used alone as an oil. The manufacturers claim that Silco greases retain the lubricating value of steam cylinder oil, eliminate all its disadvantages, and possesses the aditional merits of following the gear teeth and silencing noisy gears. This product is manufactured from a base of super-refined steam cylinder oil, to which, by a special process, is compounded a body which is said to be at all times and under all conditions of a stiffened creamy consistency, unaffected by weather conditions.

This grease, which the manufacturers claim will not leake out of casings nor drip from bearings, is made in four consistencies; light, medium, heavy, and Ford Special, all of which are guaranteed to lubricate satisfactorily differential and transmission gears. It may be obtained in 5 or 10 pound cans, or 25 pound pails.

**Manufactured by International Lubricants Co., 161 Devonshire St., Boston, Mass. Write for prices and samples.**

## FORD AUTOMATIC SIMPLIFIER.

The Ford Automatic Simplifier, as the name indicates, is a device for making the driving of the Ford car the simplest possible. When this device is attached the entire control, so to speak, is in the brake pedal. With the car in motion it is only necessary to apply the service brake and the car will be stopped, the clutch is automatically brought to neutral and so remains until released. Low and high speeds are attained, as at present, by the application of the clutch. When this device is in use it is said that it is impossible to "kill" the engine. Since the clutch is at neutral as soon as the service brake is applied, it is impossible for the car to move forward because of clutch engagement when engine is being cranked.

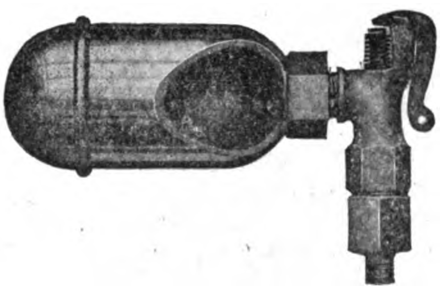
**Manufactured by Marion Metal Products Co., Marion, Ind. Price upon request.**

## PENNOCK HEADLIGHT TILTER.

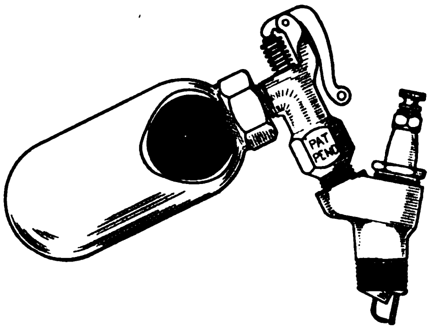
A new solution for the headlight problem is given in the Pennock headlight tilter, a device for controlling the headlights of practically any make of car. The apparatus consists of a pair of headlight brackets mounted on the mudguards and connected with a foot pedal in such a manner that by pressing upon the pedal the brackets are tipped forward. With the pedal released the headlamps are in normal position, throwing the beam of light straight ahead. For driving in cities or towns the lights may be locked so that the beam does not rise above the height prescribed by law. When meeting another automobile the lights may be depressed so that the rays do not dazzle the passing motorist, yet illuminate the road ahead.

For illuminating the road when topping a hill the tilting device makes the lamps exceptionally convenient. Beyond the fitting of the foot pedal no alterations to the car are necessary.

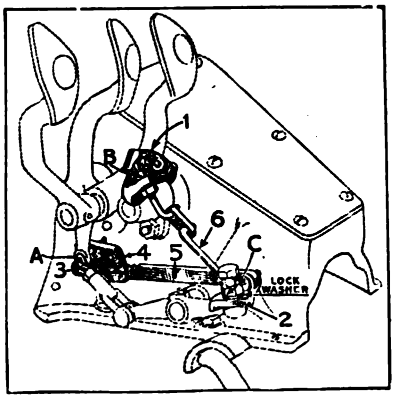
**Manufactured by the Specialty Mfg. Co., Minerva, O. Price for Fords $5. For other makes of cars write for prices.**



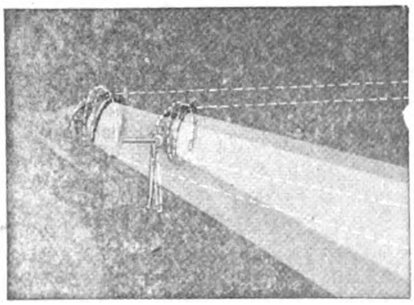
Buell Regular Type Explosion Whistle.



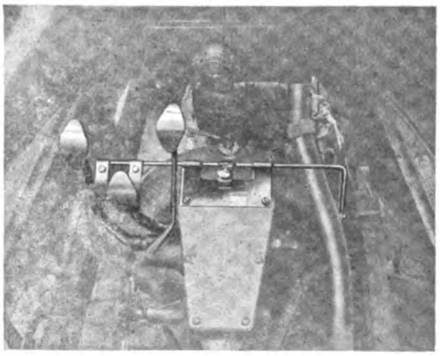
Buell Ford Type Explosion Whistle.



Ford Automatic Simplifier.



Pennock Headlight Tilter.



The Speederator Applied.

## THE SPEEDERATOR.

A most unique accessory for the Ford car has just been put upon the market which would seem to revolutionize the Ford car control. The device combines a foot accelerator with an automatic controlled advance and retard for speed changing. It eliminates the necessity of any and all hand operation of the steering post throttle and automatically idles the engine in changing speed. When low or reverse clutches are engaged the engine is supplied with more gas automatically and speeded up. As soon as these clutches are disengaged the gas is automatically cut off, preventing the racing of the engine, and making the change from low to high, which is so difficult for amateurs an easy matter.

In addition to the automatic feature is provided a foot throttle or accelerator, which renders driving convenient and identical with high priced car methods of control.

**Manufactured by Detroit Starter Co., Detroit, Mich. Price $2.85.**

## BUELL EXPLOSION WHISTLE.

A distinctive and new warning signal is introduced under the trade name of Buell explosion whistle. As the name indicates, this device is operated by the pressure caused by the explosion in a gasoline engine. Mechanically it consists of a fitting which may be screwed into the engine in place of the priming cup and in which is fitted a small poppet valve of ½ inch in diameter. The valve is opened by a control cord which may be fastened to the steering column, allowing a small amount of gas to pass through it and operate the whistle. The makers sell the device under a ten years' guarantee and claim that under ordinary conditions it will last longer than the car itself.

The warning is said to be distinctive enough to command instant attention even above all other traffic noises.

**Manufactured by Buell Co., 1610 So. Michigan Ave., Chicago, Ill. Price for single tone with valve $4.25; chime model with valve $6. Special plug without whistle for Ford car attachment $1.25, whistle extra as above.**

## LITTLE GIANT WHEEL PULLER.

The old methods of driving off pulleys and gears with a hammer and a bar of iron often resulted in damage to the parts due to the jar and vibration. A wheel puller is the logical thing to use when gears, pulleys, or wheels are firmly fixed to the shaft. For this purpose, the Little Giant gear and wheel puller has been designed. This device is made of four bar arms of drop forged steel with hooks and adjustable center bolt which admits of adjustments up to 13 inches. The arms are so arranged that with the pressure screw in place there are four pulling points so distributed that there is no need for a holding or steadying bar. The puller prongs are designed to give maximum strength, yet to occupy little room. For this reason they may be used for removing timing gears or other gears where room is limited.

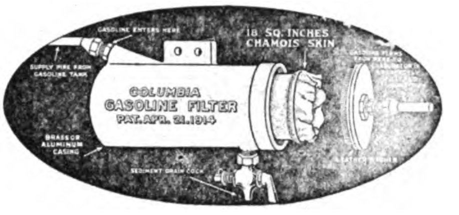
This device is handy in removing inside work and for inside pulls. For removing small pulleys or gears a pair of extension arms may be used. These arms are provided with a locking arrangement for fastening to the pulling arms and provide for two pulling points, rather than the four as in the primal attachment.

**Manufactured by Premier Electric Company, 4032 Ravenswood Ave., Chicago, Ill. Price for "Little Giant," $10. Extension arms $1.**

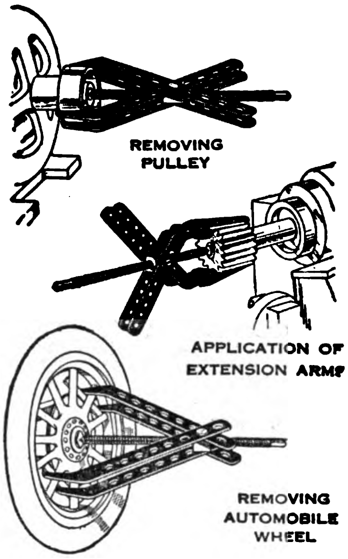
## G. A. C. ACCELERATOR FOOT REST.

Every driver of an automobile equipped with a foot accelerator realizes the importance of foot stability as effecting the car movement. With the foot supported upon the heel only, every jolt and jar of the car means a sudden acceleration or retardation of the speed and attendant strain upon the engine. The G. A. C. accelerator foot rest is a device that has been designed to relieve the foot and leg strain by carrying the weight of the foot in a specially designed rest, which is so arranged that the accelerator pedal may be held in practically any position with a minimum amount of effort. With this device, which is ornamental in effect, unsightly holes in the car matting, as well as shoe wear, is prevented.

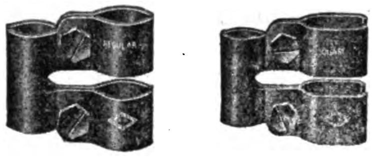
**Manufactured by The General Appliance Co., 127 Federal St., Boston, Mass. Price $1.50.**


GASOLINE ENTERS HERE
SUPPLY PIPE FROM GASOLINE TANK
18 SQ. INCHES CHAMOIS SKIN
COLUMBIA GASOLINE FILTER PAT. APR. 21.1914
BRASS OR ALUMINUM CASING
SEDIMENT DRAIN COCK

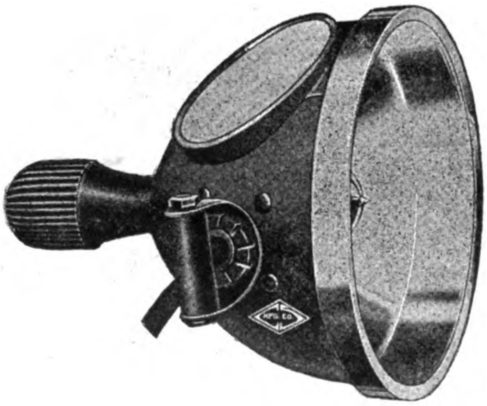
Columbia Gasoline Flter.



Little Giant Wheel Puller.



Two Types of Culver-Stearns Searchlight Clamps.



Culver-Stearns Giant Searchlight.

## COLE GASOLINE GAUGE.

No matter what car is being driven the driver at some time or other is apt to neglect the filling of the gasoline tank. This usually means a delay and possibly a long walk for more fuel. This trouble is said to be eliminated when the Cole Gas Gauge is used. This device is designed for any gasoline tank with the exception of those in cowl and operated by air pressure. It is made in two parts, the first or float part, is attached to the gasoline tank; the second or indicator, may be attached to the dash, or beside the wheel and visable at all times. It makes a handy device for checking up the car mileage with the gasoline consumed, and is an assurance that the gasoline purchased is full measure.

**Manufactured by the Halewick-Muehlhausen Co., 2350 West Austin Ave., Chicago, Ill. Price $5 for any make of car.**

## GIANT SEARCHLIGHT.

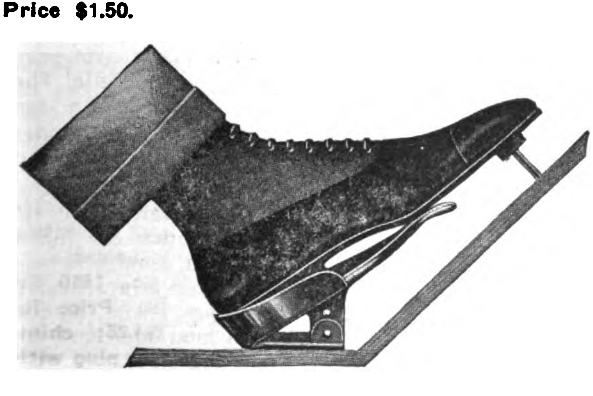
Because of the many conveniences afforded the call for a spotlight or searchlight is continually growing. For this reason the Giant Searchlight has been designed. This light is made of steel, finished in dull black enamel and fitted with a brass, silver plated over nickel reflector, scientifically laid out to give the best light under all conditions, and a rear view mirror if desired. When fitted with a nitrogen bulb and properly focussed, it is said to give enough light to enable one to see guide boards, numbers, etc., at practically any distance that the eye could read in daylight.

The bracket is made of malleable iron and designed with a universal joint so that the light beam can be directed in any direction. The light is controlled by a single point switch contained in the handle.

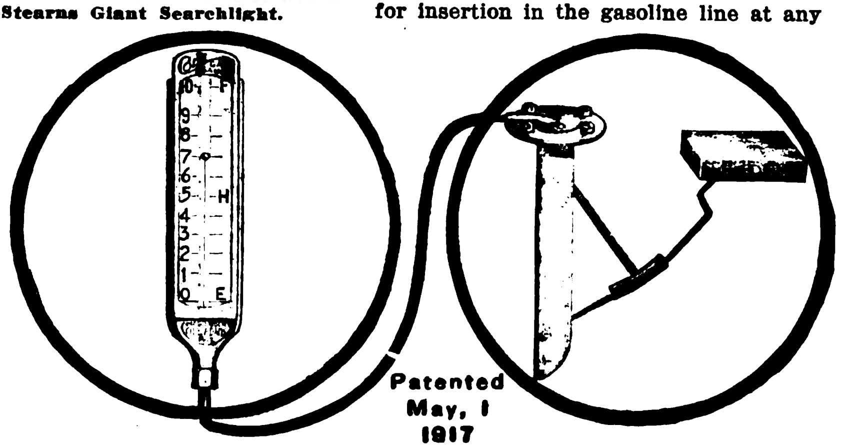
**Manufactured by Culver-Stearns Mfg. Co., Worcester, Mass. Price upon request.**

## COLUMBIA GASOLINE FILTER.

The embarrassments attendant upon poor and unfiltered gasoline is fully realized by motorists. In order to function properly the carburetor must be supplied with pure liquid, water or dirt fill up the intake valves and cause many troubles. The Columbia gasoline filter is designed for insertion in the gasoline line at any



G. A. C. Accelerator Foot Rest.



Patented
May, 1
1917

Cole Gasoline Gauge and Tank Attachment.

point between the tank and the carburetor, preferably near the latter, and is so arranged that all of the gasoline passing through it is thoroughly strained, both through chamois and wire gauze. Due to its construction the straining surfaces are large and efficient. The device is easily cleaned and may be applied to any automobile.

**Manufactured by Columbia Gasoline Filter Co., Inc., 30 Beach St., Boston, Mass. Price, $5.**

### UTILITY VARNISH RENOVATOR.

A varnish renovator and cleaner, applied by the spray method, which is highly desirable both to the garage owner and car driver, is known as the Utility Varnish Renovator. The manufacturers claim that this cleaner will remove road tar, and that it contains no chemicals that will damage the finish in any way, being non-acid and non-alkaline.

The manufacturers make an attractive proposition to dealers and request that they write for particulars and prices.

**Manufactured by Poughkeepsie Utilities Corp., 36 Winnikee Ave., Poughkeepsie, N. Y.**

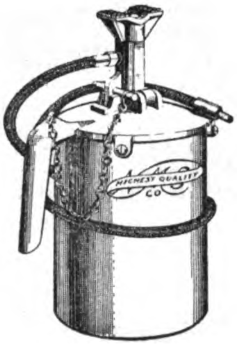
### DOVER LIGHT BULB CASE.

Stringent laws exist in practically every state relative to lights on automobiles. To drive an unlighted car after dark is a criminal offense and punishable by heavy fines in most states. To avoid the annoyance and pecuniary losses entailed by the burning out of bulbs and the attendant unlighted condition, every owner should always carry a complete set of spare bulbs. To carry the bulbs in the tool box in a loose state would undoubtedly result in their breakage, so the Dover electric light bulb case has been designed. The case is made of extra heavy steel and seamless. The bulbs are held in place by spring clips and it is said that they are kept in better condition than those on the car in use. The dimensions of the box are 5⅜ inches long, 3¾ inches wide and 3⅜ inches high. The cover is fitted with an automatic spring catch.

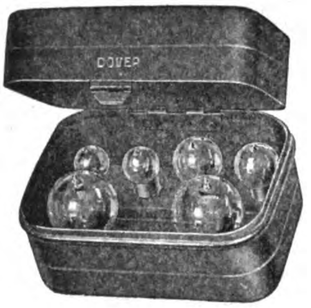
**Manufactured by Dover Stamping and Manufacturing Co., Cambridge, Mass. Write for catalogue and prices.**

### PRESTO ELECTRIC HEATER.

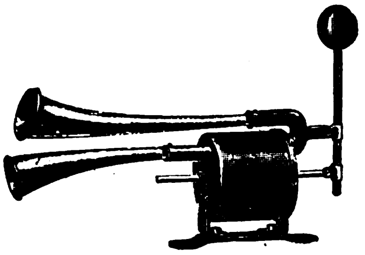
A new accessory which has just been put on the market should be of great interest to motorists who plan to run their car during the winter months, yet are unable to afford a heated garage. This device is an electrical engine heater called the Presto and operates upon ordinary electric house current. It measures 12 inches in length and is designed to hang under the hood, near the carburetor or radiator, distributing the heat where it is most needed. With the heater is furnished ten feet of cord and an attachment plug for any electric light socket. It may be used on 110 volt current, either direct or alternating. The manufacturers claim a very low cost per hour operating this attachment and say that with it the engine is kept to an operating temperature, regardless of outside temperatures.



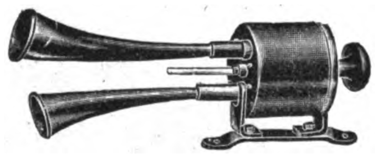
Pneumatic Jack.



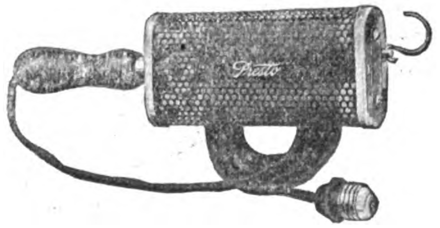
Dover Light Bulb Case.



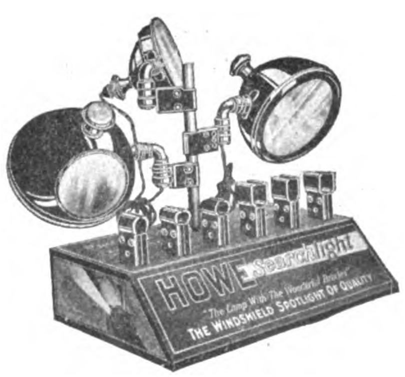
Warnola Warning Number One.



Warnola Warning Number Two.



Presto Electric Heater.


HOWE Searchlight
"The Lamp With The Handsome Bracket"
THE WINDSHIELD SPOTLIGHT OF QUALITY

Howe Counter Display.

**Manufactured by Metal Specialties Mfg. Co., 338-352 N. Kedzie Ave., Chicago, Ill. Write for prices and literature.**

### WARNOLA WARNING SIGNAL.

A horn with a distinctive note that does not alarm, yet serves as a warning signal, is illustrated herewith. This device is built to satisfy the demand for a different warning, something that would be effective in the city where everyone was accustomed to ordinary horns, and also in the country where the note must be far reaching. No diaphragms or springs are used in the horn, the note being produced by the rush of air from a piston working in a double end cylinder through reeds. Short, sharp blasts may be given by a quick movement, or a long distance covering signal produced by a slower plunge of the piston. The device is made in two styles, Nos. 1 and 2.

**Manufactured by Warnola Manufacturing Co., 73 Wooster St., New York. Price for No. 1, $7.50; No. 2, $5.**

### HOWE COUNTER DISPLAY.

That the counter display is an aid in selling goods has been demonstrated in many cases. It acts as a memorandum to the customer, and, if the display is attractive, frequently "persuades" the buyer into making an unexpected purchase. The Howe display, illustrated herewith, is attractively lithographed in red, white, blue, gray and black, and upon it is provided a space to show styles of the standard size Howe searchlights, with and without rear view mirror, and also the Howe Junior, a single shell popular priced model. In addition to the light display are spaces for six of the special Howe clamps by which the lights may be attached to various types of windshields. This attractive display stand for counter or window display, together with a set of windshield clamps, is furnished free to Howe dealers.

**Manufactured by Howe Mfg. Co., Michigan Ave., Chicago, Ill. Dealers write for prices and terms.**

### PNEUMATIC JACK.

Jacking up the car is one of the necessary evils which the motorist is bound to face sooner or later. When the rear springs, body or spare tires are in the way, it is often a big problem to raise the jack after it is placed either on the car or the road without soiling the clothes. The National Pneumatic Jack is operated by air pressure, forced through a long flexible tube by either an ordinary hand or power pump. It is claimed that the air pressure will hold up a car for at least several hours, and usually several days. A mechanical lock is provided to hold up car for storage. The makers cover it by a liberal guarantee and will send it for a 10 days free trial.

**Manufactured by National Motor Supply Co., Cleveland, O. Price, $6.**

# *Labor and Money Saving Suggestions for the Motor Car Repairman*

## RENEWING DRY CELLS.

(Figure 30 A.)

Modern methods of ignition and lighting have gradually displaced the use of the dry cell in this particular line. Inasmuch as some of the older cars, however, still require that type of cell, the following hint may save quite a little money for the owners of such machines.

Remove the paper cover from the battery and inspect same. If the zinc case is smooth and not badly eaten away by the action of the chemical, it will pay to adopt the following procedure:

With a quarter inch wire nail punch a row of holes through the zinc into the white inside case, about half way up the side of the battery and all around it. About eight or nine holes will be sufficient. Below and relatively between these holes punch another row, as before. The sketch clearly shows their relative positions.

After punching about three rows of holes place the battery in a solution of sal ammoniac and water. This solution should be mixed so as to contain rather more sal ammoniac in proportion to water than is usually used for wet batteries. The mixture should cover the top row of holes punched, but should never reach to the top of the battery. After the battery has stood in this solution for about 12 hours, take it out and replace it in its paper cover.

Batteries treated in this manner will sometimes last three or four months when used intermittently. Of course, some will so depreciate in their first using that this procedure will not bring any results.

Save the sal ammoniac solution for future use. It will last quite a long time if kept well corked.

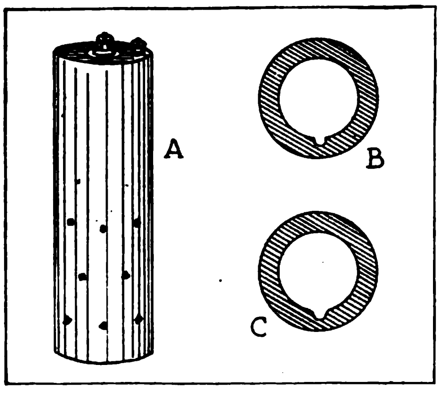


**Fig. 30—A, Illustrating How to Treat Dry Cell for Renewal; B, Incorrect Shape of Oil Groove; C, Correct Form.**

## CLOSING AUTO DOORS.

(Figure 28.)

A "jitney" owner who has been put to considerable trouble by the swinging open of the fore door of his automobile, adopted the following arrangement for closing the door without the necessity of reaching over to the side of the car: A piece of flat iron was attached to the back of the door as shown in illustration. To it was fastened a length of clothes line. The line was run through roller blocks to the steering column, where it was fastened. To close the door it was only necessary to give the line a quick tug. The line also served the purpose of preventing the door from swinging open too far on its hinges.

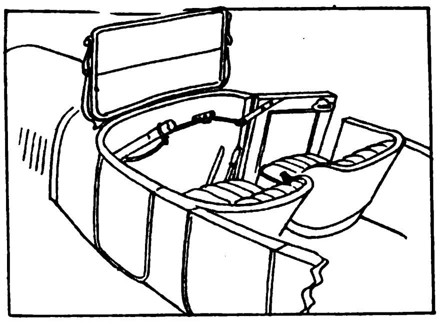


**Fig. 28—Illustrating Method of Closing Automobile Door.**

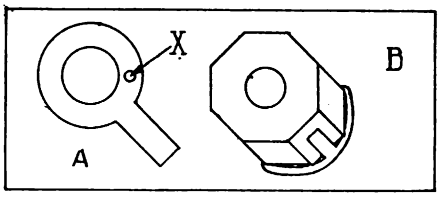


**Fig. 29—Nut Locking Device.**

## LOCKING NUTS.

(Figure 29.)

Due to continued vibration and strain, the bolts and nuts on an automobile have a tendency to loosen unless locked by some device to prevent their turning. Grave accidents have often happened and the cause traced to a loose nut or bolt. Important nuts are usually locked by lock nuts, split washers, or heads, pins or castellated nuts with cotter pins. An easy method of locking nuts into place is by cutting a piece of iron or tin into the shape illustrated at A, the large hole in the centre slipping over the bolt, the small hole X fitting over a small pin, which is driven into the piece to be bolted. After the tin has been put into place and the nut screwed down the flap on the tin is bent upward and against the nut, thus preventing the nut from jarring loose, the pressure of the nut holding the pin which passes through X into place.

## SHAPE OF OIL GROOVES.

(Figure 30 B C.)

Few repair men realize the great importance of oil grooves in a bushing. The shape plays just as important a part as does the groove itself. The proper function of an oil groove is to distribute the lubricant over the surface of the bearing and to form a path for the oil to traverse, in most cases, the length of the bushing. It is, therefore, important that the oil groove distributes the oil rather than scrapes it off.

At B in our illustration is shown the end of a bushing in which the oil groove having sharp edges is very liable to scrape the oil from the shaft. At C we see the method of smoothing off the corners of the groove to properly distribute the oil.

## CLEARANCE TESTER.

(Figure 31.)

Valves should be inspected at least once a week, and the clearance between the valve stem and tappet adjusted. The thin sheet of metal used for measuring this clearance is easily mislaid, or bent and destroyed. Our cut shows a safety razor blade riveted between the folds of a piece of tin. The blade is opened in a manner similar to opening a jack knife, the thin edge being protected by the tin. Before boring the razor blade for the rivet it will be necessary to heat the corner portion red hot, letting it cool slowly to remove the temper.

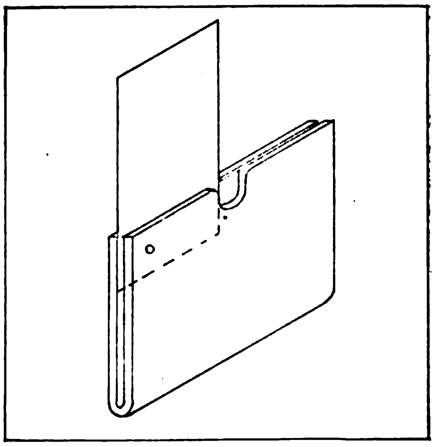


**Fig. 31—Clearance Tester.**

### WINDSHIELD WIPER.

(Figure 32.)

Many accidents on rainy or foggy days are caused by moisture collecting upon the windshield and obscuring the view of the operator. There is no excuse for this when a windshield wiper may be constructed as cheaply as is shown in the cut.

Upon a piece of flat board tack a length of rubber such as a strip cut from an inner tube, bend it at right angles to the board and fasten it in that position by a thin wood cleat on the back as shown. On one end of the board screw a block through which has been bored a hole just large enough to slip easily over the windshield binding. From this hole to the edge a slot is cut to allow space for the glass. When put into place the rubber strip should press lightly against the outside of the windshield glass, and this when moved from side to side removes all moisture from the outside of the windshield. The apparatus may be mounted either on the top as shown, or the side of the windshield, as is most convenient.

### MUFFLER CUT OUT.

(Figure 34.)

Though but little power is gained by cutting out the muffler and open mufflers are prohibited on the highways in many states, it is often a great help for testing out the engine, as the noise is increased and individual explosions are more distinct. Cut outs are being dispensed with upon many of the new model cars. Should any of the readers desire to place a cut out on his car the process is simple and inexpensive. The parts required may be obtained in practically any hardware store or at any plumber's. They are assembled as shown in the diagram and consist of: A pipe T, as shown at D, to which is fastened the engine exhaust pipe, A, and the muffler pipe, B. One side of the T is drilled for a ⅜ inch carriage bolt, F, which passes through the T and extends through the floor about one inch. A nut on the end of the bolt serves to hold the washer, E, into place against the open end of the T.

The spring C fits over the bolt, presses against the pipe T and is held into place by a washer and pin passing through the bolt. When pressure is applied to the bolt head the passage is opened by the exhaust pressure.

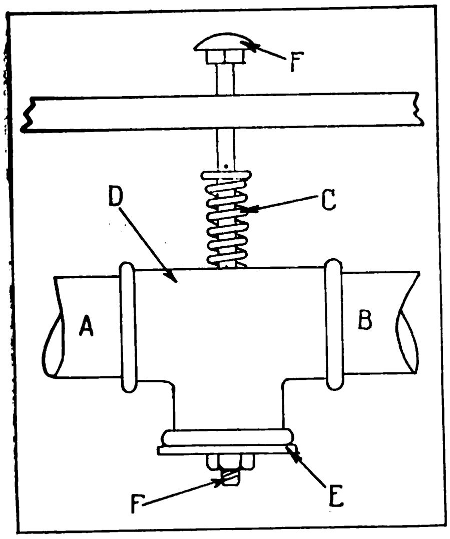


Fig. 34—Muffler Cut Out.

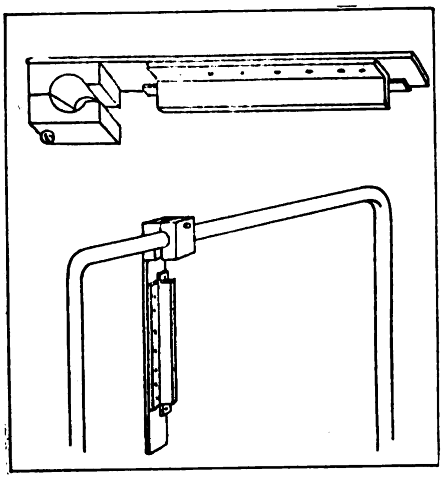


Fig. 32—Windshield Wiper.

### AUTOMOBILE LATHE.

(Figure 33.)

Our illustration shows a novel, three-speed, wood turning lathe. The rear wheel of an automobile is jacked up and a strong block is placed under the axle to form a firm support; the other wheel is fixed so that it will not turn. A wheel thus arranged forms a three-speed head for the lathe. A spare hub cap should be taken to a machinist and fitted with either a sharp flat point or a drill chuck. It is necessary, of course, that the point or chuck be mounted in the centre of the hub cap. A chuck would be the most convenient fitting, because it could be used to hold drills, spindles or arbors the same as an ordinary lathe drill chuck is used. The illustrations shows a flat point, however. If a chuck is used the flat point is placed in the jaws.

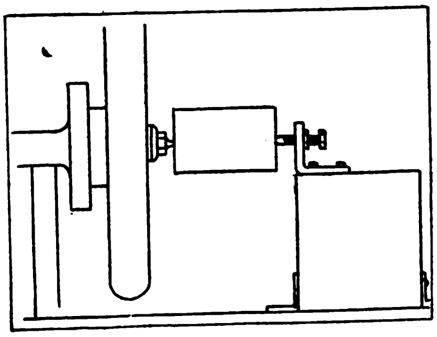


Fig. 33—Illustrating an Automobile Lathe.

The tail of the lathe is made up of a heavy piece of wrought iron about ½ inch thick and two inches wide, into which is screwed a ⅝ inch pointed set screw. This piece of iron is firmly bolted to a wood block high enough to bring the point of the set screw on a line with the centre of the point, or chuck, mounted on the hub cap of the automobile; the whole is firmly bolted to the floor and reinforced by angle irons. The tool rest may be made of wood and may be movable, such as is used on an ordinary carpenter's wood turning lathe.

The distance between the head and tail of this lathe is limited only by the width of the garage. Such a lathe will be found very useful for wood turning, boring holes, polishing round pieces of metal, rough metal turning and, by mounting an emery wheel on a wood arbor, for grinding.

### OIL GAGE.

(Figure 35.)

The operation and life of an engine is dependent upon proper lubrication. Hence, if the oil level is allowed to drop below that for which it is designed, many troubles are bound to develop and the engine may be badly damaged. Many of the cars now in use are not equipped with oil level gages and the operator is dependent upon judgment, or is forced to put in oil until the engine begins to smoke. The evil of carbonization is then apt to develop. It is not a hard job to make an oil indicator which is positive in action yet does not contain glass parts which are easily broken. Procure a length of ⅛ inch brass pipe about six inches long, a piece of ¾ inch pipe six inches long, a ¾ inch pipe cap, a reducing elbow ¾ by ⅛ inch, a piece of cork trimmed to ⅝ inch diameter and a round piece of wire or wood for an indicator. This material is assembled as is shown in the illustration, A, the ⅛ inch pipe is screwed into the engine base at such a point below the oil level as to permit the oil to rise into the ¾ inch pipe, B, about half way to the top. The cork float, C, is fastened to the indicator wire, D, and placed in the pipe cap, E, through which is bored a hole just large enough to allow the indicator wire to slide easily through it. After the correct level is once found, and a mark made upon the indicator, it is an easy matter to tell at a glance just how much oil is needed and how much there is in the engine base. This oil height indicator is positive acting for the reason that if at any time the pipe, A, should become clogged, a pumping motion upon the indicator, D, will force out the obstruction. The cost is simply a very small premium for engine damage insurance.

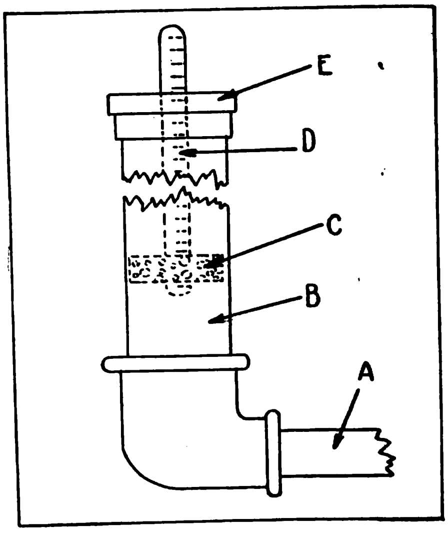


Fig. 35—Oil Gage.

# OVERHAUL OF A DODGE BROS. CAR—SAVE THIS

## It Will Come In Handy Some Day When a Machine of This Make Is Brought into Your Garage for Repairs or Trade

**This article is reprinted from the Automobile Journal of Oct. 10, being one of a series begun three months ago dealing with the purchase and restoration of used cars. Preceding articles in this series have taken in detail the mechanical construction of the Ford, Chevrolet 4-90, Overland, Maxwell, Studebaker and Dodge Brothers cars. Future articles will deal with practically all of the well known cars and will be fully illustrated. It is the purpose of these discussions to show that a used car, one or more years old, has extensive service value, and that often, with but a slight outlay of time and the systematic replacement of a few parts, its usefulness can be increased greatly, making it for practical use, comparable with a new car.**

THERE have been but few radical changes in the Dodge Brothers car since its first appearance and it is the purpose of this article to cover practically all of the models now in use. Aside from a slight change in the gasoline and ignition systems, the engine remains practically the same as originally designed. It is of the removable L-head type with the intake manifold cast integral with the cylinder block.

The first step in the overhaul is the draining of the water and removal of the radiator which is held to the frame by two bolts, one upon each side of the center. The water hose connections should be unclamped and removed. The secondary wires should next be marked with tags and disconnected from the plugs. After the secondary wire retaining fibre has been unfastened, the distributor cap with wires may be lifted from the distributor and the secondary assembly removed from the car. Where the engine is equipped with the Delco system, the wire leading from the distributor to the coil must be removed before taking off the distributor cover. In every case the greatest care must be observed not to loose the distributor brush.

The gasoline should next be drained from the vacuum system by removing the filter cap which is located beneath the carburetor float chamber. This will allow all of the gasoline to escape from the vacuum tank and feed line. To drain the carburetor float chamber the gasoline needle valve cap which is located at the top of the float chamber should be removed and the needle valve lifted from its seat, allowing the escape of the gasoline from the carburetor. After the fuel tube from the gasoline tank and the control rods have been disconnected, the tank and carburetor may be unbolted and the whole assembly removed from the car.

As a general rule all fuel lines should be cleaned as often as possible. This may be accomplished by blowing compressed air through the tubes, by running a stiff wire through them, or by flushing with kerosene. The fuel line which leads from the tank to the vacuum chamber may be blown out by the first method, after the tank filling cap has been removed. Unless the carburetor or vacuum tank have been causing trouble they should not be disturbed. The carburetor is fitted with a filter screen at the inlet valve, below the float chamber. This screen should be cleaned, and is the only part of the carburetor that might require special attention.

### Work on Engine Parts.

After the 14 nuts which fasten the cylinder head to the engine block have been taken off, the head may be removed from the engine, exposing the cylinders, pistons, and valves. From these parts the carbon should be removed by scraping and washing with kerosene oil and a stiff brush.

The valves are fastened in the engine block in the conventional way by pins and washers. They are accessible by the removal of the two valve stem cover plates which are located below the exhaust manifold. The valve springs may be lifted by means of a valve spring lifter, the pins taken out releasing the washers and springs and the valves removed one at a time for grinding. Before beginning the grinding operation, a piece of cotton cloth or waste attached to a piece of string should be tucked into the cylinder passage, while another piece of waste should be placed in the valve pocket, to prevent the grinding compound entering the manifold.

A careful examination of the valve guides should be made and where the fit between the valve stem and guide is poor, a repair should be made. In the earlier engines the guide formed a part of the block and was not fitted with a bushing. The Dodge Brothers sell valves with oversize stems which serve to compensate for the wear at this point. If, however, the guides are worn out of round, they should be reamed before being fitted with oversize valves. For this purpose the Dodge Brothers put out a special boring and reaming device, with which the guides may be reamed and bushed. When this is done the old valves may often be used, since the wear upon the stems is seldom great. In the later types of engines the valve guides are bushed and repair is made, simply by removing and replacing the bushings with new.

### Magneto and Ignition.

After the wires leading to the motor-generator and magneto or coil have been tagged they should be disconnected. Both the magneto and Delco ignition systems are driven from the pump shaft and are driven through a flexible coupling. This coupling should be disassembled, the ignition unit unbolted from the base and then lifted from the car.

The fan belt adjustment is then loosened and the fan with the belt removed. The fan drive pulley is fastened to the shaft by a pin, and a key. The pin is driven out and the pulley pulled from the shaft with a wheel puller.

On the later cars the water pump drive gear is enclosed in a removable housing, while on the earlier cars, the timing gear housing together with the water pump gear housing was cast in one piece. Where the engine is fitted with a removable water pump housing, the next step in the disassembling is the removal of the water pump, while in the earlier types, the water pump should be left until the engine has been removed from the chassis.

Disconnect the water connection from the cylinder block by removing the nut which fastens the water fitting to the block, then remove the bolts which fasten the water pump to the crankcase. Next remove the water pump gear housing whereupon the pump with housing and gear attached may be taken from the engine.

The gear which drives the pump shaft is next pulled off and the water pump cover removed, exposing the water pump paddle. A careful cleaning should be given this unit. If the bushings which form the bearings are worn they may be replaced with new.

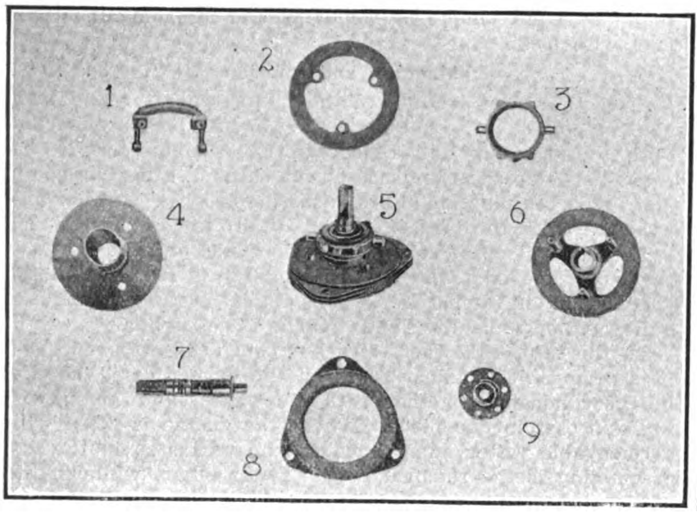
The motor-generator, which is driven by a chain and located on the left side of the engine, should next be removed. The clamp which fastens this unit to the engine should first be uncoupled and the chain inspection cover taken off. After the chain adjusting ring set screw has been loosened and the castellated binding nut on the starter removed, the eccentric adjusting ring may be turned so as to slacken the chain. With the chain slack, the master link may be uncoupled and the chain removed. The motor-generator may then be removed from the engine.

To obviate any chance for breakage, the oil filler and breather pipe should be unbolted and removed, and the button which is on the top of the oil level indicator taken off.

### Letting Down the Engine.

The oil tube which is coupled to the oil pump and extends to the upper part of the crankcase on the outside front of the engine should next be disconnected at the pump, and, after the oil has drained from the system, the engine should be supported by a block and tackle, or by a bar passed through the carburetor intake passage and supported upon horses or boxes. The bolts which fasten the upper part of the crankcase to the gearset should then be loosened so as to allow about ¼ inch clearance. The bolts holding the oil pan to the bottom of the crankcase and gearset should then be removed and the engine slowly let down enough to permit the removal of the oil pan. This procedure is necessary because there is a small flange on the gearset bell housing which under ordinary conditions keeps the rear of the pan from clearing the housing. After the pan has been removed, the upper crankcase-gearset bolts should be tightened again. This applies only to earlier models.

When the oil pan has been removed the oiling system will be exposed. The oil pump which is located near the front end of the pan consists of two vanes and an impeller mounted on a vertical shaft and driven by a set of spiral gears. After the oil tube which leads from the pump to the lower part of the case has been uncoupled and the two retaining screws removed, the pump body with shaft and gears attached may be taken off for examination. Since this is a most important part of the engine, the oiling system should be given a thorough cleaning. The oil strainer, which is mounted on a flange retained by two screws on the lower part of the case should be thoroughly washed or replaced if it is broken. The oil tube should be cleaned by means of a stiff wire and flushed with kerosene oil. All of the oil tubes, including the tube leading to the pressure indicator should be treated in a like manner.



**Disc Clutch Components. 1, Clutch Release Fork; 2, Driven Disc; 3, Clutch Release Collar; 4, Pressure Plate; 5, Clutch Disc Assembly; 6, Driven Spider; 7, Clutch Shaft; 8, Driving Disc; 9, Shaft Bearing Retainer (Front).**

In replacing the oil tubes, the joints may be made tight by an application of shellac. Shellac is also used upon the gaskets which fit between the oil pump body and the oil pan as well as between the oil strainer fitting and the oil pan. It is essential that all joints be tight, or the oiling system will not be efficient. When the oil pump is replaced the vanes should be placed with the spring between them, and so that the flat faces are in the direction of the rotation of the impeller.

The oil pan which is fitted with troughs into which the connecting rods dip should next be removed and the oil pan reservoir given a thorough cleaning.

All of the connecting rod bearings may be replaced without removing the connecting rods, since the babbitt is cast in two sections which are removable. If the engine is to be removed from the chassis, however, the weight is greatly lessened by the removal of the pistons and connecting rod assembly at this point. The wrist pins are fastened into the piston by a set screw and this end of the connecting rod is fitted with a removable bushing. In case of lost motion or play, it is always advisable to replace either the bushing or wrist pin or both, or a knock will be caused. When the wrist pin set screw is replaced, it should be pinned into place by a cotter pin, or damage to the engine will result.

Two methods of power plant removal are possible; the engine may be removed by itself, or the engine and transmission gearset may be taken out at the same time. The first method is to be recommended as being the most practical for the novice, since the weight of the full power plant is much greater than that of the engne alone.

If the engine is to be removed by itself, it should be supported by block and tackle, or by a bar passed through the intake passage, as before directed. The bolts which fasten the crankcase to the transmission bell housing are next removed and the ball joint cover which retains the front engine member in the frame taken off.

Two types of clutches have been used on the Dodge Brothers Car; The first 50,000 cars were equipped with a leather faced cone clutch, while the later ones were fitted with multiple disc clutches. In each type, the clutch shaft is carried in a ball bearing which is fitted and retained in the engine crankshaft.

In removing engines which are fitted with the cone type of clutch, it is necessary to remove the clutch with the engine, but before this can be done the set screws which fasten the clutch shift fork to the pedal shaft must be removed and the clutch pedal shaft withdrawn, this will release the fork which may be lifted from the gearset. The engine may then be lifted out as hereinafter directed.

In the disc type clutch the wheel is fitted with three driving pins upon which are fitted the driving plates. When this type is being disassembled the engine may be taken out without disturbing the clutch or shift fork.

Before removing the engine, however, the two bolts which fasten the bell housing to the frame must be taken out and the transmission slipped back slightly to allow clearance enough for the freeing of the engine in the front. The front is first lifted clear of the supporting member, then the engine is moved forward and up until it is free from the transmission gearset housing.

Where the full power plant is to be removed, the universal joint ball housing ring is unbolted and the top of the transmission gearset which carries the emergency brake and the speed change lever taken off. The brake rods and controls are then disconnected and the transmission gearset may be removed with the engine as above directed. When this has been done the gearset housing and clutch assembly may be removed from the engine in the same manner as directed for the removal of the engine alone. In lifting the complete power plant from the car, the engine should be supported by ropes passing around it, rather that by the method recommended for lifting out of the engine separately.

After the engine has been removed, if the clutch is of the disc type, the removal of the flywheel, which is retained to the crankcase flange by six bolts, is the next step. Where the clutch is of the cone type and has been removed with the engine, the lock screw, which is located on the clutch spring adjusting nut, should be unscrewed and the nut backed off. It is a good plan to wind a piece of rope or cloth around the square end of the clutch shaft, just before the nut is ready to come off, and to unscrew the nut with a pipe wrench. The strong spring will force the nut off very quickly against the cloth, and one should be careful not to have one's fingers in the way.

In returning the spring assembly, the spring should first be put into place, then the adjusting nut, and upon the nut a length of pipe. When pressure is brought to bear upon the pipe the spring is compressed and the nut may be turned into place, and locked.

After the clutch spring has been removed, the drum may be slipped from the shaft, exposing the flywheel assembly which is removed as directed above.

The next step in the disassembling is the removal of the timing gear case cover. When this is removed, the timing gears are exposed as well as the motor-generator driving sprocket. On the removal of this cover from the older cars, the pump gear may be taken off and the pump removed as directed earlier in this article.

Unless the gears or sprockets are badly worn, they need not be removed from either the camshaft or crankshaft since the main bearing caps may be removed and the crankshaft taken out allowing the removal of the camshaft without disturbing the gears.

### Taking Gears From Crankshaft.

To remove the gears from the crankshaft, the starting pin must first be driven out and the oil pump gear collar removed. The oil pump gear may then be pulled from the shaft with a wheel puller, as may also the starter chain sprocket. After the spacing collar has been removed from against the timing gear, this gear may also be pulled from the shaft with a wheel puller. In reassembling, care must be used to get the spacing collars back to their proper locations.

The camshaft timing gear is screwed to a flange which is integral with the camshaft. When the six cap screws have been removed, this gear may be taken from the shaft.

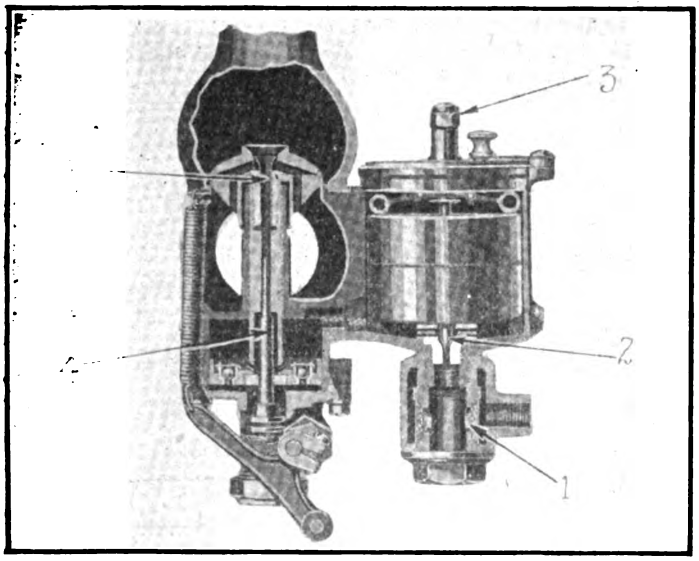
The camshaft is retained by a pin which fits in a groove cut in the center camshaft bearing. This pin in the older cars was held in place by a set screw, while in later models a spring is used. When the pin is removed, the camshaft may be pulled from the engine.

If the clutch is of the disc type and still remains in the housing the clutch release fork should be removed as directed for the removal of the cone clutch; the clutch assembly may then be slipped from the housing and disassembled.

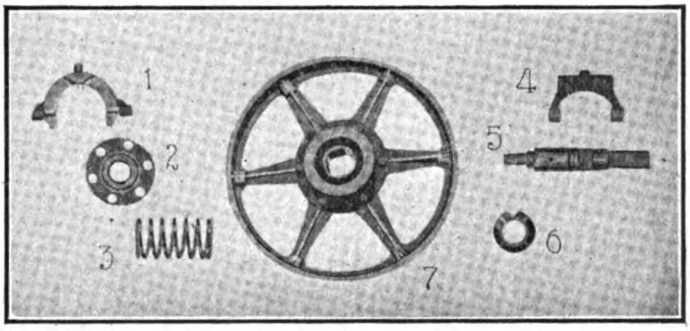
### Disc Clutch Disassembly Described.

The disc clutch assembly is made up as follows: The shaft upon which the discs are assembled is fitted at the front end with a shoulder against which the clutch driven spider rests. This spider is keyed to the shaft, fitted with three driven disc pins upon which the driven plates are carried, and has a smooth face against which the driving plates are clamped when the clutch is engaged.

Alternately on the spider are: first a driving plate which has three holes through which the flywheel driving studs fit, and which is faced upon both sides with wire-woven asbestos fabric; then a smooth driven plate fitting upon the clutch-driven spider pins; the entire assembly ending up with a driving disc. Upon this plate assembly is placed the pressure disc which fits over the driven spider pins, and which carries a long hub with a shoulder on the front inside edge. Inside this hub and resting against the shoulder is the spring, which is held compressed against the shoulder by a clutch spring retainer and a split washer which fits into a groove cut in the clutch shaft. The spring tension is increased or decreased according to the place of location of the split washer upon the shaft and for this adjustment, three grooves are cut in the shaft. To release this pressure it is necessary to pull the pressure disc toward the rear, and for this purpose a ball bearing and clutch releasing housing which is carried in the clutch release fork, is provided. To disassemble this unit a special tool is provided by the Dodge Brothers factory to compress the spring, remove the split washer and release the spring. If no special tool is at hand, the assembly may be placed in a press, and a piece of pipe used against the clutch spring retainer to compress the spring and proceed as above. For washing the asbestos clutch fabric, turpentine may be used in preference to gasoline because of its penetrative qualities.



Cross Section of Carburetor. 1, Gasoline Filter Screen; 2, Needle Valve; 3, Needle Valve Cap; 4, Metering Pin; 5, Spray Nozzle.



Cone Clutch Components. 1, Clutch Release Yoke; 2, Front Bearing Retainer; 3, Spring; 4 Fork; 5, Clutch Shaft; 6, Adjusting Collar; 7, Cone.

### Operations on the Transmission.

If the transmission has not already been removed, it should be taken out as directed in the paragraph describing the removal of the engine and transmission as one unit.

The first step in the disassembling of the gearset is the removal of the universal joint. The joint is fastened together by four bolts, when these bolts are removed the joint may be disassembled, and the nut on the end of the driving shaft which fastens the front member of the joint in place exposed; this nut should be removed and the joint member, which is keyed to the shaft, pulled from the shaft. The three screws which fasten the front of the universal housing to the gearset case should then be removed, exposing the ball bearing which may then be driven from the housing.

The sliding gear shaft may then be removed from the housing and the gears and bearings examined. The front ball bearing is held in place by screws and a washer located inside the clutch bell housing, when these screws are removed this bearing may be driven out and examined. In driving out bearings of this type the blows should be struck against the outer race, since it is the outer race which is fastened into the housing.

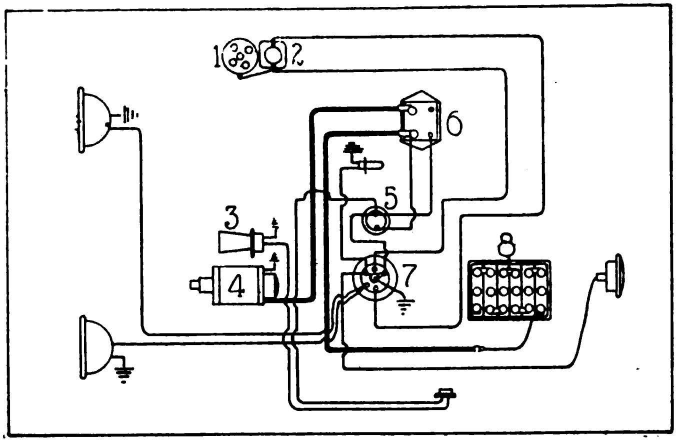
The countershaft is retained by a screw which is located at the back of the gearset housing. When this screw has been removed, the countershaft may be drawn out, leaving the four gears assembled inside the case, from which they may be lifted out. The two outside gears of the countershaft assembly are keyed and driven on to the reverse and low gear casting which rotates upon the countershaft.

The reverse idler gear is mounted upon a bracket which is located on the left side of the transmission gearset and retained by six screws. When the bracket is removed, the retaining pin may be taken out allowing the gear and shaft to be disassembled.

### Rear Axle and Differential.

The rear axle is of the full floating type and may be entirely disassembled without removing the housing from the car. The rear of the car should be jacked up to remove the weight from the wheels and the eight nuts holding the wheel hubs removed. The wheel hubs may then be withdrawn, carrying the driving shafts with them. The differential cover plate is next removed, exposing the differential assembly.

The differential assembly is carried in roller bearings which are held in clamps upon the propellor shaft housing. These clamping brackets are fitted with caps which should be removed, permitting the removal of the differential case



**Starting, Lighting, and Ignition Wiring of the Later Dodge Brothers Cars.** 1, Distributor; 2, Ignition Coil; 3, Horn; 4, Motor-Generator; 5, Current Indicator; 6, Starter Switch; 7, Ignition and Lighting Switch; 8, Battery.

with the bearings and races. Four studs and nuts are used for fastening the two differential housings together, when these are removed, the differential may be disassembled. After the differential has been assembled and the brake control rods removed, the cap screws which fasten the drive shaft housing to the rear axle should be taken out and the drive shaft unit pulled from the axle.

To disassemble this unit, the pinion gear must first be removed from the shaft. The gear is keyed and held by a nut, and, with the nut removed, may be drawn from the shaft with a wheel puller. With the gear removed, the shaft may be drawn from the front end of the shaft.

Both roller bearings are held in place and adjusted by bearing adjusting rings which may be inspected or unscrewed through a hole in the top of the shaft housing which is fitted with the adjusting ring lock.

It is of the utmost importance that the relative positions of the pinion drive and the driven gear are correctly made, or these gears will wear very rapidly and cause much noise and grinding.

After the drive shaft and differential have been reassembled and the rear axle put into place a careful adjustment should be made as follows:

### Adjustment of Driving Unit.

Turn down upon the drive shaft adjusting collars until the edge of the pinion gear teeth are in a line with the backs of the teeth on the master or ring gear. Then turn on the differential adjustments until both gears are meshed, or bottomed against each other with the back edges of the teeth forming a smooth line. With the gears bottomed, the teeth should not overlap each other on the ends. If the adjustment is left this way, the gears will grind, because they are set too tightly together. The drive shaft adjustment should be backed off one or two notches, as should also the differential adjustment, permitting a clearance between the teeth of between .006 and .009 of an inch. After the adjustment has been made the collars should be locked. There should be no play in either the differential or drive shaft when a proper adjustment has been made.

Two types of steering gears have been used, the older, a sliding block and sector; the later a worm and worm gear. The sliding block type had a coarse worm which was coupled to the steering wheel. Upon the worm was fitted a block having upon its edge teeth, forming a rack. As the steering wheel was twisted, the rack was raised or lowered turning the sector, upon which was mounted the steering arm, thereby cramping the wheels.

The later type is shown in the illustration and consists simply of a worm and wheel. Play or lost motion in both types may be compensated by the tightening of the nut which is located at the top of the housing. In addition to this, lost motion or wear may be remedied in the later type, by the turning of the worm wheel one full quarter of a revolution. Since the worm wheel is seldom used for more than one quarter of its circumference only about one quarter of the teeth are worn at each adjustment, permitting four adjustments before actual replacement is necessary.

### Timing and Adjustments.

Before setting the camshaft gears, all the valves and tappets should be adjusted so that the clearance between them is between .003 and .004 of an inch. When this is done, the crankshaft should be turned clockwise until the piston in number one cylinder is 1-16 inch past the top of its stroke. The camshaft should then be turned counter-clockwise until the exhaust valve in number one cylinder has just closed, then the gears should be meshed. As a general rule, the timing may be verified by the marks upon the flywheel or marks upon the timing gears.

Before setting the magneto the magneto driving shaft coupling should be disconnected and the spark lever set at full retard. The engine should then be turned until the piston in number one cylinder has reached the top of its stroke and passed over about five degrees. (About ⅝ inch measured on the circumference of the flywheel.) The exhaust valve of number four cylinder should now be closing. The magneto shaft should next be turned in a clockwise direction (facing the rear of the car) until the distributor brush is under the terminal connected with the spark plug in number one cylinder, then back or forward until the points in the breaker box are just separating. The coupling should then be connected and the timing checked. The cylinders should fire in the following order, 1-2-4-3.

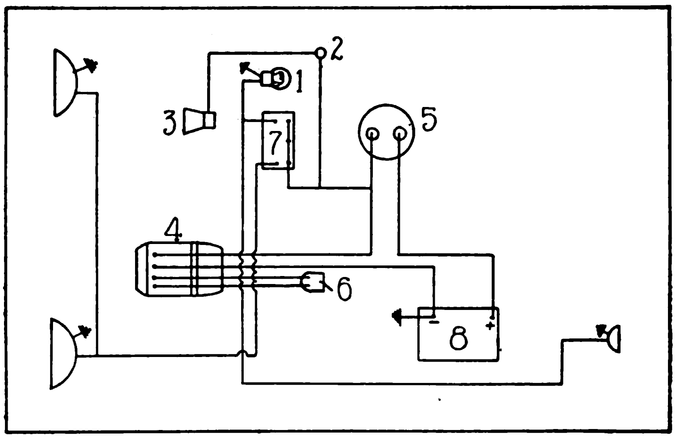
The setting for the Delco unit is similar, though in this case the coupling need not be unfastened, since all of the adjusting may be done by loosening the breaker box cam.

There is but one carburetor adjustment and this is made at the factory. So that beyond the cleaning of this device, no further attention is necessary.

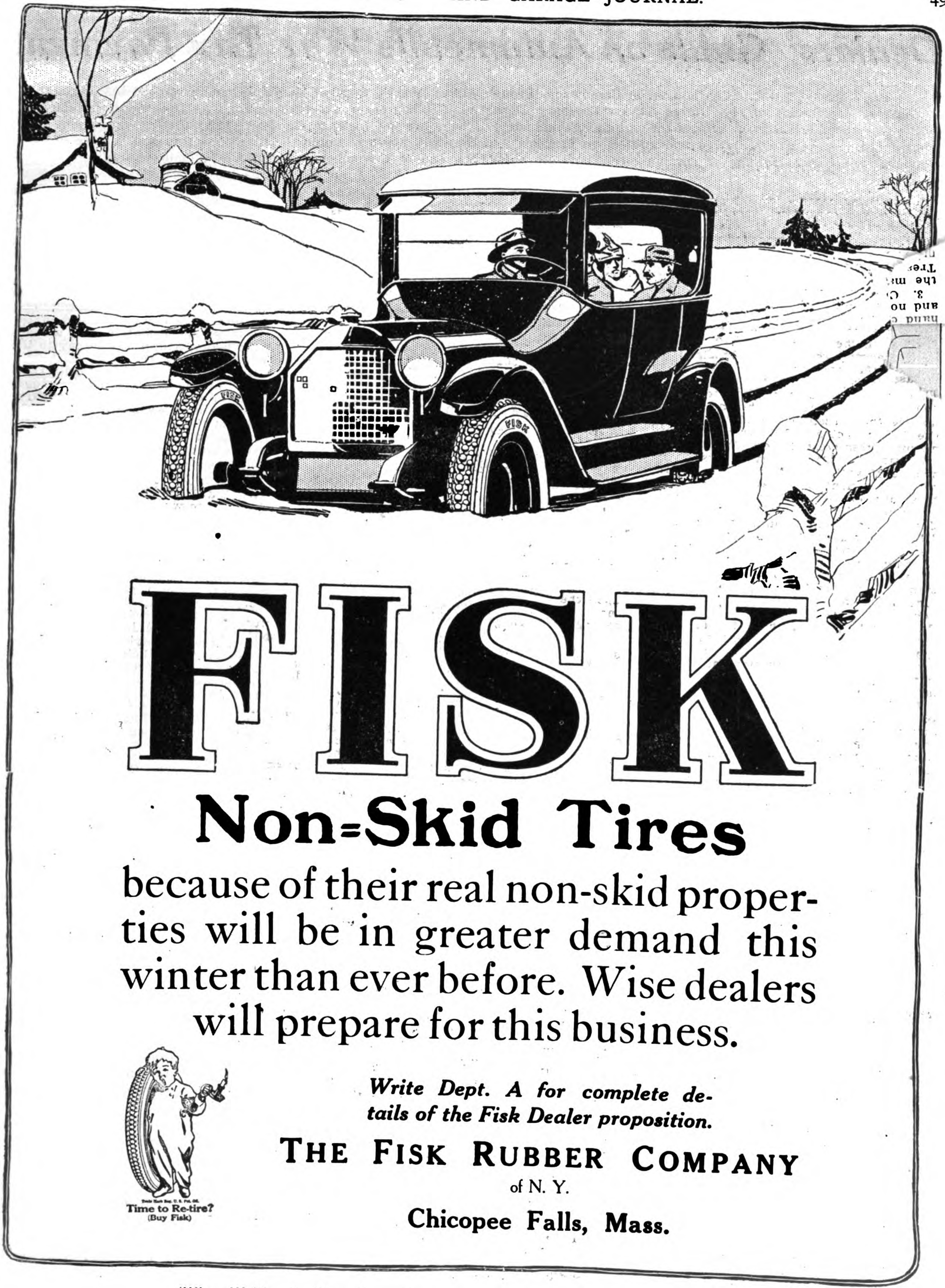
## THE DIXIE HIGHWAY AND MARGINAL MILITARY ROAD.

A substantial fund of $50,000, added to an equal amount set aside by the State of Kentucky from its quotas of Federal aid for 1917 and 1918, will be sufficient to open a seven-mile link in the Dixie Highway through the mountains in southeastern Kentucky, which is the only remaining barrier to travel from north of the Ohio river to Florida. Two-thirds of the required subscription fund is already assured. The importance of this route can hardly be over estimated. It will provide a "drive away" road for motor cars and trucks manufactured in the North, which will help to relieve railroad freight congestion and will provide a winter and summer highway for tourists driving South and North.

The board of directors of the National Automobile Chamber of Commerce has indorsed the Chamberlain-Dent bill recently introduced in Congress, which provides for preparation by the War Department of plans for and the construction and maintenance of a military highway.



**Starting and Lighting Wiring of the Earlier Dodge Brothers Cars.** 1, Dash Lamp; 2, Horn Button; 3, Horn; 4, Motor-Generator; 5, Current Indicator; 6, Starter Switch; 7, Ignition and Lighting Switch; 8, Battery. Taken from American Bureau of Engineering Wiring Diagrams.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# *Dealers' Guide on Automobile War Tax Payment*

**The National Automobile Chamber of Commerce, through Alfred Reeves, General Manager, has announced that through courtesy of officials of the United States Treasury Department it has secured certain rulings relative to provisions of the war revenue act as it affects the automobile industry. These are set forth in the following bulletin. Statement is made that these are tentative and subject to changes, but they will serve to guide the manufacturers and dealers until official and formal rulings are promulgated, possibly before the end of November, when the taxes must be paid:**

1. Manufacturers' Tax—Manufacturers selling new automobiles, including trucks, on and after Oct. 4, 1917, pay a tax of three per cent. on the manufacturer's selling price.

2. The tax is levied on the price the manufacturer receives for the car—not the list price, unless actually sold for that. When the price is paid part in money and part in other considerations (a second-[illegible]ar), the tax is levied on the price Motoit on the actual cash received.

[illegible]harging the Tax to Consumer—If [illegible]nufacturer passes the tax on, the [illegible]asury Department believes that the price the manufacturer gets for the car (which is the basis for the tax), should include the present price of the car plus the tax collected. For example, if the manufacturer sells the car for $800, plus the war tax, $24 (or makes his selling price $824 with no reference to the tax), the government will assess the tax of three per cent. on $824, which is what the manufacturer receives in making the sale. Thus for the manufacturer to receive the full $800 for his product plus the war tax, his billing price would have to be $824.74, of which three per cent. or $24.74 would be paid to the government, leaving the manufacturer his $800 net. The manufacturer's present price, would, therefore, be 97% of the total charge to the customer. This would appear to be a tax on a tax, but the Treasury Department rules that the tax is on the gross amount the manufacturer receives in making a sale and the tax is a part of that amount, even though later it is paid over to the government.

4. Floor Tax—Wholesalers, or combined wholesalers-retailers, holding new automobiles, including trucks for sale at the opening of business Oct. 4, 1917, are taxed 1½ per cent. on what was paid to the manufacturer for the automobiles in question. However, the wholesaler, and wholesaler-retailer, are not taxed on automobiles sold and delivered prior to May 9, 1917, where title has been retained as security for payment of purchase money. The dealer who does a retail business and also a wholesale business is subject to the tax as a wholesaler on all the new automobiles held on Oct. 4, 1917, irrespective of whether they are subsequently to be sold at wholesale or retail.

5. Second-Hand Cars Are Not Taxable—The treasury officials finally reached the conclusion that second-hand cars are not taxable under the act, whether held by manufacturers or wholesalers.

6. Chassis Taxed—Chassis are considered automobiles and therefore are taxable.

7. Contracts Prior to May 9, 1917—The above taxes are collected from the seller of the car, except in the following cases: If the manufacturer, wholesaler or wholesaler-retailer, sell a taxable automobile to a dealer under contract made prior to May 9, 1917, then no matter what the contract has to say about the taxes, the dealer who buys the automobile must assume the tax and pay it over to the seller, who in turn will pay the tax to the government.

8. Conditional Sales—When an automobile was delivered to a purchaser prior to the date of the law, on a conditional sale contract by which the seller retains title to the automobile as security for the purchase money, then the sale is made when title is passed. Such a sale is taxable if a simple sale between the same parties on the same date is taxable. (See exception in paragraph seven, relating to sales before May 9th.)

9. When an Automobile Is Sold—The manufacturers' automobile tax accrues when the automobile or truck is sold. The question of when an automobile is sold is governed by the usual rules of law and of commercial acceptance, to wit: That the sale takes place when title to the merchandise passes to the buyer, that such passage of title may occur either by the physical transfer of the property or the bill of lading representing the same, to the purchaser or to the agent of the purchaser, and that, therefore, title passes when the merchandise is delivered to a carrier who is the agent of the buyer or the bill of lading is put in the mail (the postoffice being custodian of the purchaser), or when the bill of lading is delivered to the bank representing the purchaser.

10. Chattel Mortgages—Car delivered with a chattel mortgage is a sale when title passes and not when the mortgage is paid off.

11. Selling Cars to United States Government—The Treasury Department will probably rule that such automobiles or trucks can be relieved from the tax under section 3464 of the Revised Statutes. Under that provision of law the government has been purchasing, without levying any tax upon the seller, various articles which, in terms, are taxed under different internal revenue provisions of law.

12. Procedure—The seller, to avail himself of this provision, should, before he delivers the merchandise to the government, have the branch of the government which is purchasing the article make application to the Treasury Department for an order releasing these articles from the tax. Unless such order is obtained it would be necessary for the seller to add the tax to the cars or trucks sold to the government. Companies that have contracts with the government now for supplying merchandise without a provision for passing the tax should make the above application immediately.

13. Sales to Foreign Governments Taxable—Motors, cars or trucks sold to foreign governments are taxable. In the case of cars sold to foreign branches, where the branch is a separate identity, the tax accrues as usual when the sale is made to the branch; otherwise tax does not accrue until the sale is made by the foreign representative or agent of the manufacturer.

14. Branch House Stocks—If the so-called branch house is a distinct and separate corporation from a manufacturer's corporation, even though the manufacturer holds the majority or the whole of the branch corporation stock, then the manufacturer is not liable for any taxes incurred by the branch.

15. Extras Shipped with the Car—The Treasury Department rules on the question of extras, that when such extras are shipped with the car and make one sale, the manufacturer shall pay the tax on the full amount. If the car is shipped, regular, however, and a set of wire wheels purchased extra, or another body, such extras would not be taxed.

16. Plan of Averaging the Tax so All Final Buyers Pay the Same Amount—The Treasury Department does not look with disfavor on the plan of averaging the tax so that the amount of tax paid by the ultimate buyers of a certain type of car shall be the same, irrespective of the sliding scale of discounts allowed various classes of dealers. They agree that it would be fairer to the retail buyer. The department is interested in the tax which the manufacturer pays on his car sales and not on the form in which he passes it to the ultimate consumer. To avoid misrepresentation the ultimate purchaser should not be billed with an item labeled "War Tax" unless it is the exact amount. There is no objection to the billing being marked "To Cover War Tax" and a sum charged on each car to go through all transactions, and the total of which at the end of the year will be approxmately the amount which the manufacturer has to pay to the government.

17. Don't Establish Improper Precedents—To avoid establishing improper precedents in doubtful cases, inform party from whom you collect a tax that you are in doubt and that as soon as the government makes official rulings you will return any unwarranted collection.

18. Making Reports—In making return to the government, list all articles that are taxable and make payment thereon. On articles as to whose liability for taxes you are in doubt, make a separate return to the government stating reasons why you believe they are not taxable. Do not pay tax on this class unless ordered by the government. This policy will give the government all needed information and will protect you from any penalties.

19. Time for Paying Taxes—Your local collector of internal revenue will supply information as to the time and mode of making returns and paying taxes. Wholesalers should make their returns on the floor tax, with checks covering the proper amount, before Nov. 2, 1917. The payment may be extended to a date not exceeding seven months from the passage of the act, upon the filing of a bond for the payment. This bond shall be in a penal sum of not less than double the amount of the tax and in no case less than $1000. Your Liberty Bonds will be accepted at par, covering the amount of taxes involved instead of double as required if a surety bond is given.

20. Manufacturers' Returns—Manufacturers should make reports, with checks for the proper amount, on their October sales any time before the end of November. After that they make monthly reports.

General situations may be referred to us for the attention of our counsel or for submission to the Treasury Department, but specific cases, involving details of a particular transaction, should be first submitted to your own counsel with the papers.

## STEWART-WARNER EARNINGS.

The Stewart-Warner Speedometer Corporation, Chicago, reports net earnings for the quarter ending for Sept. 30 last of $640,485 after deducting the six per cent income tax, but without deduction for the excess profits tax.

## J. W. FLORIDA IN THE ARMY.

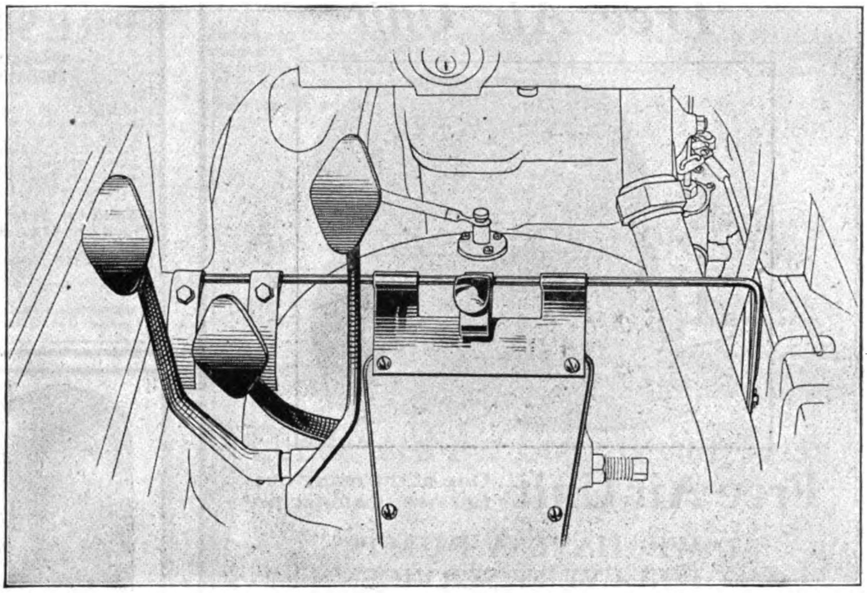
James W. Florida, formerly assistant manager of the Philadelphia branch of the Locomobile Company of America, has been commissioned a major of infantry and is attached to the Motor Transportation Corps of the U. S. Army. He will be stationed in France.

# SPEEDERATOR *for* FORD CARS

VERSAL PRODUCTS FOR THE UNIVERSAL CAR
DETROIT STARTER COMPANY
DETROIT, U.S.A.

## $2.85

**Prevents stalling, bucking, engine racing—provides automatic engine control. Gears changed from high to low or low to high or reverse without touching hand throttle—engine automatically slows or accelerates to desired speed—a gas saver, a safety device, a great comfort for smooth driving of multi-cylinder motor. Ideal for Ford converted trucks as it prevents unnecessary use of gas. Speederator is fully covered by patents.**



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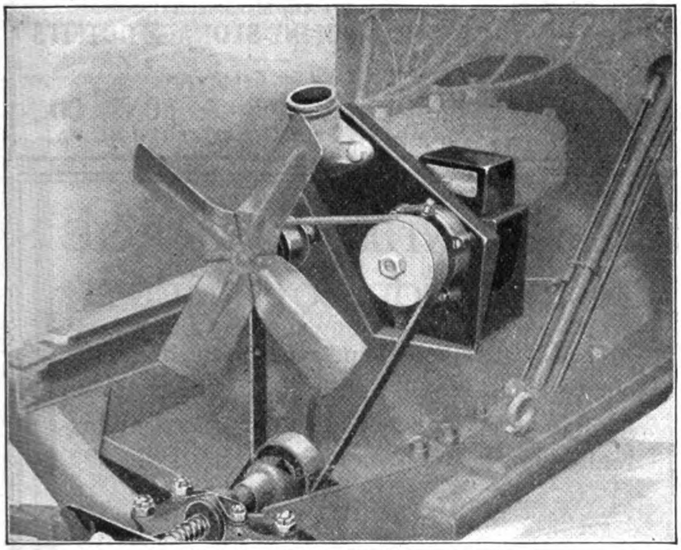

**Genolite (Type H) Assembled**

# Genolite (Type H)

(SIX VOLT SYSTEM)

## FOR FORD CARS

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### Electric Lighting Ford Cars at a Low Cost

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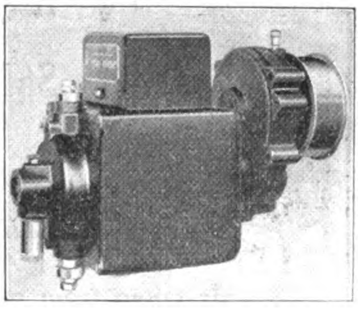

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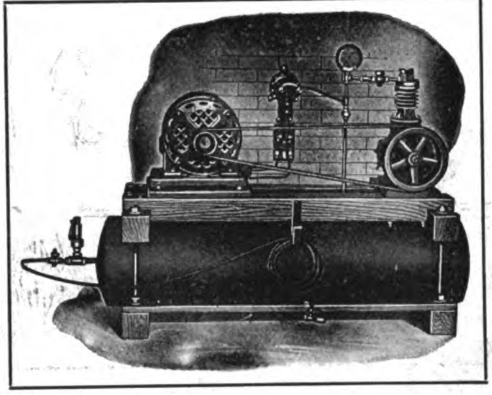

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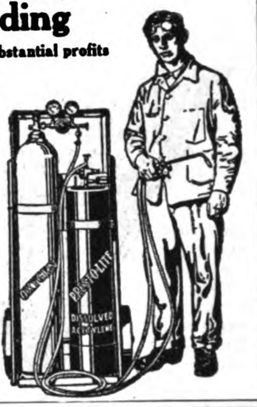

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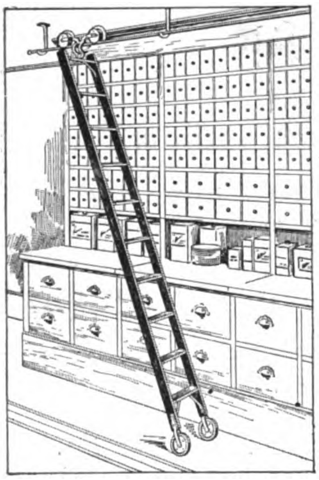

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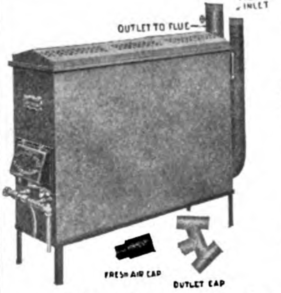

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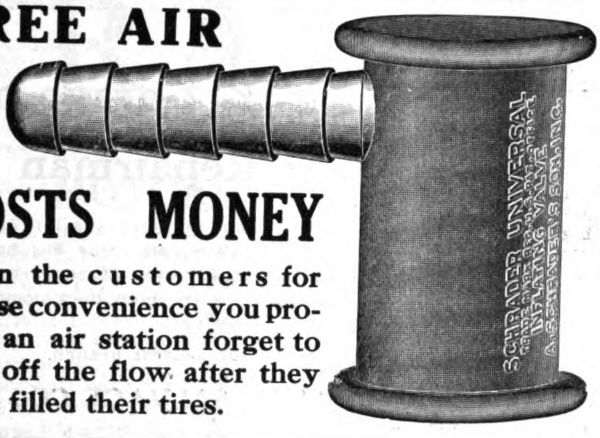

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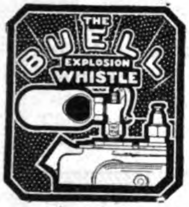

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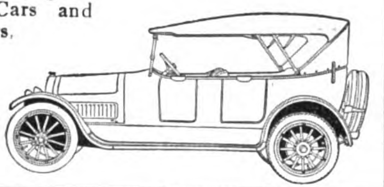

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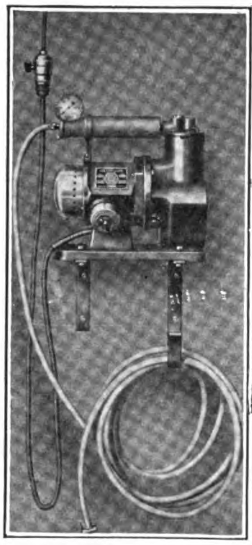

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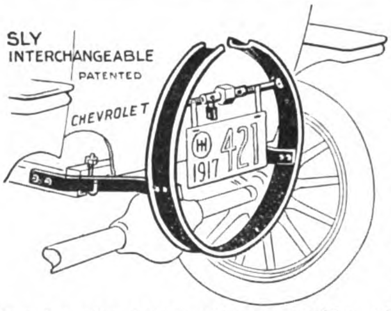

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## INDEX TO ADVERTISERS

Page
A. B. C. Starter Co. ........ Cover
Adamson Mfg. Co. ........ 59
Advance Auto Accessories Corp. ........ 7
Aerofram Co., The ........ 58
American Motors' Parts Co. ........ 55
Apperson Automobile Co. ........ 53
Auglaize Motor Car Co. ........ 62
Automobile Accessories Co. ........ 55
Auto Parts Co. ........ 55
Auto Salvage Co., Inc. ........ 54
Auto Wrecking Co. ........ 55

Bacon Service Co. ........ 64
Ballman-Whitten Mfg. Co. ........ 58
Bay State Pump Co. ........ 58
Bearings Service Co. ........ 53
Bilodeau Ball Bearing Works ........ 63
Black & Decker Mfg. Co. ........ 53
Bowser & Co., Inc., S. F. ........ 59
Box A ........ 54
Box E ........ 55
Brunner Mfg. Co. ........ 6
Buell Co. ........ 53
Butler Mfg. Co. ........ 55

Champion Ignition Co. ........ 8
Chase & Co., L. C. ........ Cover
Continental Auto Parts Co. ........ 62

Detroit Magneto Exchange ........ 55
Detroit Starter Co. ........ 51
Dixon Crucible Co., Jos. ........ 58
Dyer Co., G. H. ........ 1

Eby, Henry E., Jr. ........ 54

Faw, Inc., J. H. ........ 59
Fisk Rubber Co. ........ 49
Fitzgerald Mfg. Co. ........ 4

Garford Motor Truck Co. ........ 56
Gardner Governor Co. ........ 52
Gibson-Hollister Mfg. Co. ........ 56
Greenfield Tap and Die Corp. ........ 57

Harvey Spring & Forging Co. ........ 64
Haywood Tire and Equipment Co. ........ 64

Imperial Brass Mfg. Co. ........ 61
International Metal Polish Co. ........ 61
International Lubricants Co. ........ 63

Jandorf Automobile Co. ........ 55
Jenkins Vulcan Spring Co. ........ 56

K. B. C. Company ........ 5

Leahy, John W. ........ 54

Mabey's Electric and Mfg. Co. ........ 61
Martin Mfg. Co. ........ 59
Milbradt Mfg. Co. ........ 52
Mossberg Co., Frank ........ Cover
Motor Specialties Co. ........ 64

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## INDEX TO ADVERTISERS
(Continued)

Page
Motorists Accessories Co. ........ 54
Mueller & Co., R. S. ........ 63

National Cash Register Co. ........ 9
New Departure Mfg. Co. ........ 64
New Era Spring and Specialty Co. ........ 53
Niehoff & Co., Inc., Paul G. ........ 61
Norma Co. of America ........ 57

Pierce Governor Co. ........ 56
Pillsbury Mfg. Co. ........ 60
Poughkeepsie Utilities Corp. ........ 62
Prest-O-Lite Co., Inc. ........ 52
Puritan Machine Co. ........ 55

Ross-Gould List and Letter Co. ........ 56

Page
Scaife, Wm. B. & Sons Co. ........ 52
Schrader's Son, Inc., A. ........ 53
Service Gear and Machine Co. ........ 55
Starrett Co., L. S. ........ 10
Stevens & Co. ........ 64
Stockbridge Body Co. ........ 60
Sullivan Motor Car Co. ........ 56
Superior Mfg. Co. ........ 52

Toledo Gas Engine Works ........ 64

United Engine & Mfg. Co. ........ 52

Vanderpool Co. ........ 58

Walden-Worcester, Inc. ........ Cover
Weston Electrical Instrument Co. ........ 62
Williams Foundry and Machine Co. ........ 63
Whittier Co. ........ 59

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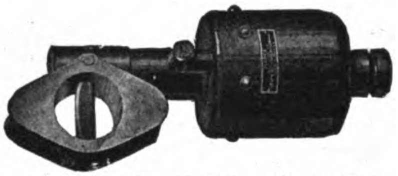

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**Do Business by Mail**

It's profitable, with accurate lists of prospects. Our catalogue contains vital information on Mail Advertising. Also prices and quantity on 6,000 national mailing lists, 99% guaranteed. Such as:

War Material Mfrs.
Cheese Box Mfrs.
Shoe Retailers
Auto Owners
Wealthy Men
Ice Mfrs.
Doctors
Axle Grease Mfrs.
Fly Paper Mfrs.
Foundries
Farmers
Fish Hook Mfrs.

Write for this valuable reference book. Also prices and samples of Fac-simile Letters.

*Have us write or revise your Sales Letters.*

Ross-Gould, 1015K Olive Street, St. Louis

**Ross-Gould Mailing Lists St. Louis**

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JUMBO
MOLITE
MADE IN U.S.A.

## NO MORE RUST!

**The clean, non-rusting, non-corroding "NONCORO" FINISH on JUMBO SPARK PLUGS**

means absolute freedom from rust throughout the life of the plug. This new finish is a handsome gray which still further enhances the value of the world's super-plug.

**The 50 Cent Price**

makes Jumbo Spark Plugs the most profitable buy for dealer and driver.

***DEALERS! Get in touch with your jobber now!***

**Gibson-Hollister Mfg. Co.**

Central States Branch
St. Louis, Mo.

**SPRINGFIELD, MASS.**

---

## SELL SULLIVAN TRUCKS

One of the few staple and practical trucks on the market.

Our selling policy and proposition is the most liberal ever offered to the trade.

**One Model, 3,000 Lbs. Capacity**
**Chassis Price, $1,600**

***Write for complete details***

**SULLIVAN MOTOR CAR CO.**
**Rochester, New York**

---

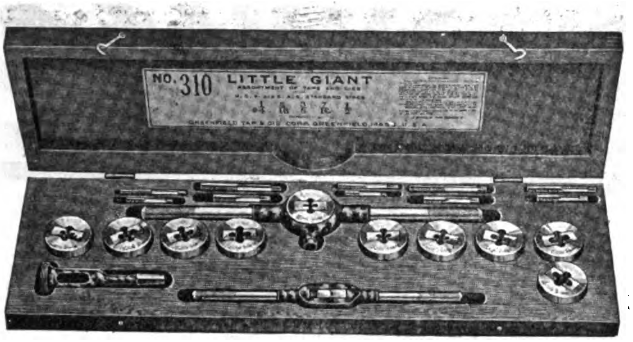
## 90,000 SPRINGS IN STOCK—FOR EVERY CAR

VULCAN
QUALITY

Write FOR CATALOG AND DISCOUNTS
DISPLAY RACK FREE WITH ORDER FOR 12 ASSORTED

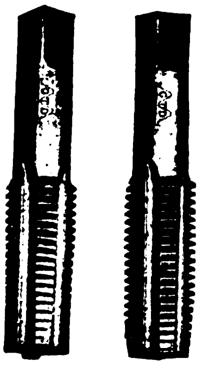
**Jenkins Vulcan Spring Co.**

Saint Louis, Mo. - - - 1402 Chestnut St.
Minneapolis, Minn. - - 1024 Hennepin Ave.
Reading, Pa. - - - - 538 Franklin St.
Forth Worth, Tex. - - 708 Commerce St.
Sumter, S. C. - - - - 29 Caldwell St.



Little Giant Screw Plate

# The Complete Line of Threading Tools



Hand Taps

Whatever your requirements in the screw cutting line may be, we can meet them, as our line is the most complete in the world. Bear in mind that our service in the threading tool line is unexcelled.

Ask for a copy of our No. 37 general catalog which contains besides the products listed below many tables of valuable information for garage repair men, etc.

Below is a partial list of products shown in the catalog.

Little Giant Die

**Taps**—All kinds, for hand and machine use, in all thread standards.

**Dies**—Several styles, for hand and machine use, in all thread standards.

**Screw Plates**—Many styles and assortments for bolts, nuts and pipe, with Automobile (S.A.E.), U.S.S. or V threads, combination assortments with both U.S.S. and S.A.E. thread taps and dies.

**Pipe Tools,** Wrenches, Vises, Cutters, Stocks and Dies.

**Reamers**—Hand and Machine, bit brace and straight shanks, all types.

G. T. D. Threading Machine

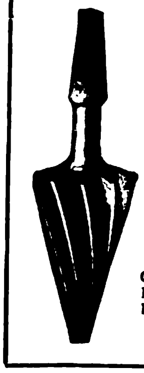
Send for a catalog for ready reference.

GTD

## Greenfield Tap and Die Corporation

**Greenfield, Mass.**

New York, 28 Warren St.
Chicago, 13 South Clinton St.
London, 149 Queen Victoria St.
Canadian Factory, Wells Brothers Company of Canada, Ltd., Galt, Ont.



G. T. D. Burring Reamer

# "NORMA" BALL BEARINGS

(Patented)

So small a thing as the bearing of the magneto or lighting generator may set the limit to the service capacity of a car or truck. The failure of such a bearing, impairing the ignition or the lighting, may result in condemnation of an otherwise high-class car or truck.

**The almost universal standardization of high-grade magnetos and lighting generators on "NORMA" Ball Bearings is proof of the confidence the makers of these accessories have in "NORMA" quality as a safeguard to themselves and to the makers and owners of cars and trucks.**

**Be *Sure*—See That Your Electrical Accessories Are "NORMA" Equipped**

## THE NORMA COMPANY OF AMERICA

**1790 BROADWAY NEW YORK**

**Ball, Roller, Thrust and Combination Bearings.**

# MAKE YOUR GREASE FIGURES MOUNT

by selling the one kind of lubricants that serve your customers best.

**DIXON'S GRAPHITE Automobile LUBRICANTS**

GREASE BUSINESS
DIXON'S GRAPHITE GREASE No. 677

bring your customers back and make increased sales for you because they are the 100% lubricants.

*Send for Dixon's Dealers' Deal, No. 49-G.*

**JOSEPH DIXON CRUCIBLE CO.,**
Jersey City, N. J.
Est. 1827.

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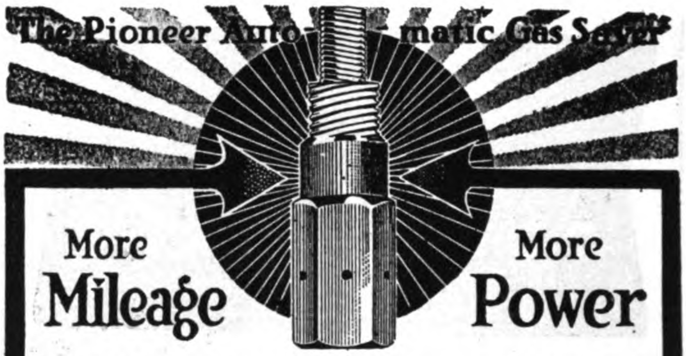

The Pioneer Automatic Gas Saver

More Mileage More Power

# AEROFRAM Gas Saver

**The Simplest and Most Efficient of All Gas-Saving Devices—Effects a Notable Improvement in Engine Performance—Anybody Can Install It in Ten Minutes—For All Cars.**

***Absolutely Automatic—Nothing to Adjust***

**Dealers:** The Aerofram actually does the work that more expensive gas-savers claim to do. When you offer it to your customer you do so with the certainty that he cannot duplicate its efficiency with any other device at ten times the price. It will positively add two to six miles per gallon—in many cases more. Hundreds of users have testified to this. Write for details. Liberal selling terms.

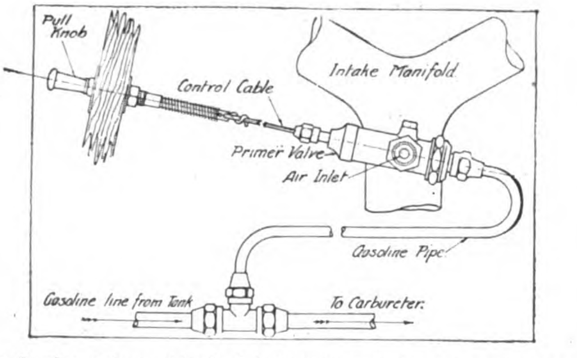
***Price in Canada $1.50***

**$1 The Aerofram Co. $1**
**107 Massachusetts Avenue. Boston, Mass.**

---

# COPLEY PRIMER

***An Auxiliary Carburetor guaranteed to start any motor on one turn in the coldest weather and with any grade of gasoline.***



The Copley when attached becomes permanent equipment and can be installed in less than 30 minutes. Automatically regulated, supplying gasoline and air in the right proportions and at great velocity, thus insuring a never failing highly explosive charge.

Operated by a control on dash or instrument board.

The Copley Primer stops the heavy drains on batteries and it is the greatest time, labor and back saving device that can be placed on any car.

**Jobbers and Dealers.** The Copley is the one practical and dependable primer. Send today for full information, advertising matter and discounts.

**LIST PRICE $5.00**

BAY STATE PUMP COMPANY
*100 Purchase Street Boston, Mass.*

---

# B-W DIRECT CURRENT

20 10 0 10 20
DISCHARGE CHARGE
AMPERES
B-W MFG. CO
ST. LOUIS, MO

STURDILY CONSTRUCTED to retain accuracy under the most severe conditions. Handsome in appearance. Made in both flush and surface types. Finished in bright nickel or black rubberoid as desired.

**Better Ammeters Cannot Be Purchased, PRICE.......$1.90**

***Send For Literature***

**Ballman-Whitten Mfg. Co.,**
**2867 Gravois Ave., ST. LOUIS, MO.**

# AMMETERS

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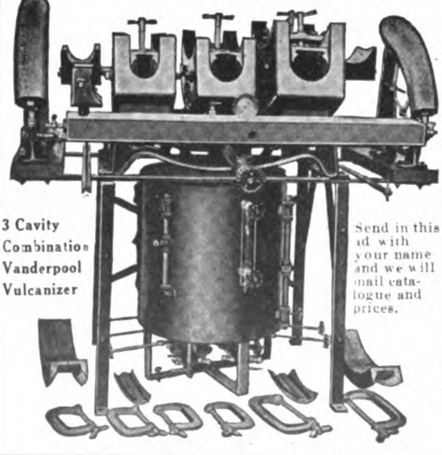
## Vulcanizing With a Vanderpool Vulcanizer Brings Big Profits



3 Cavity Combination Vanderpool Vulcanizer

Send in this ad with your name and we will mail catalogue and prices.

Here is an exceptional opportunity for Garages as well as Vulcanizing Companies to secure a vulcanizer that will turn out high-grade work at a small cost. The fuel saved alone will pay for the machine in a short time—then you will "cash in" on your investment. This plant, the Vanderpool Vulcanizer, is meeting with enthusiastic approval of hundreds of satisfied users all over the country. Unsolicited testimonials from the various companies now using the "Vanderpool" testify to the dependability, efficiency and economy of this "Vulcanizing Wonder." One man writes that the first month's profits paid for the plant. No experience needed—we teach you how. It occupies very little floor space, and "once bought, you will never have to buy again."

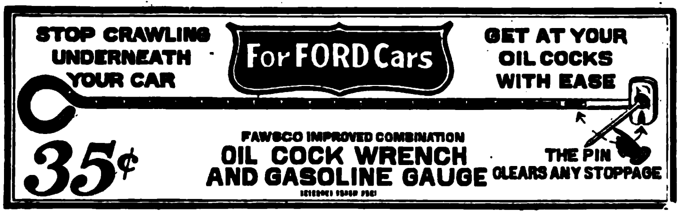
VANDERPOOL CO.
Springfield, Ohio

## "Ford Owners — Need Not Be Crabs — Lengthen Their Arms."

***Fawsco IMPROVED Combination***

## Gasoline Gauge

## Oil Cock Wrench and Cleaner


STOP CRAWLING UNDERNEATH YOUR CAR
For FORD Cars
GET AT YOUR OIL COCKS WITH EASE
35¢
FAWSCO IMPROVED COMBINATION
OIL COCK WRENCH AND GASOLINE GAUGE
THE PIN CLEARS ANY STOPPAGE

*Large easel display card like above with each order.*

**Retails 35c Trade Doz. $2.80**

Packed 12 in Heavy Carton
with DISPLAY STAND FOR
ONE—Balance in Envelopes.

**THE NECESSARY TOOL**

Branch: Atlanta, Ga. **J. H. FAW, Inc.** 41 Warren St., N. Y. City.

*Our Literature on Request.*

---

## BUY FORD HOOD COVERS NOW.

### BUY FROM US.

If you are in the market for quality covers at quantity prices write today for details and trade discounts.

We want your orders. Tell us your requirements. This is the time for you to "get in" on big sales and profits that will surprise you.

**MARTIN MANUFACTURING CO.**

LANCASTER OHIO

---

## THE NEW ADAMSON

MODEL "E"

## 5-MINUTE VULCANIZER

Made in all sizes from the small 5-Minute Vulcanizer for mending tube punctures at $1.00, to larger models for all tube and tire repairing priced from $1.50 to $12.00.

**Sold by all Dealers and Jobbers**

**ADAMSON MFG. COMPANY**

EAST PALESTINE OHIO

---

# Vaporizes Gasoline

WILMO
THIS HOT PLATE DOES THE WORK

## A Big Seller

By completely vaporizing gasoline of whatever grade, the Wilmo Manifold permits carburetor to be turned down so as to give many more miles from every gallon, and practically eliminates carbon. Insures a smoother running engine at all speeds. Attached in a few minutes with an ordinary monkey-wrench. No holes to bore. Retail prices, $7.50 (Ford size), and up. Sold on a money-back guaranty. Dealers and garage men: Write for interesting sales proposition.

**The Whittier Company**
First National Bank Bldg., Dept 2310, Chicago, Ill.

***Wilmo Manifold***

---

# Helping The Motorist

Gasoline
CHIEF SENTRY
GASOLINE

The dealer who stores and dispenses oils and gasoline with the Bowser Oil Storage System is looking after the best interests of his customers. He is protecting the motorist from inconvenience and danger; protecting the car from mechanical trouble, break downs and excessive wear, by furnishing oils that will lubricate and gasoline that is pure and powerful.

THE **BOWSER**

## Oil and Gasoline Storage System

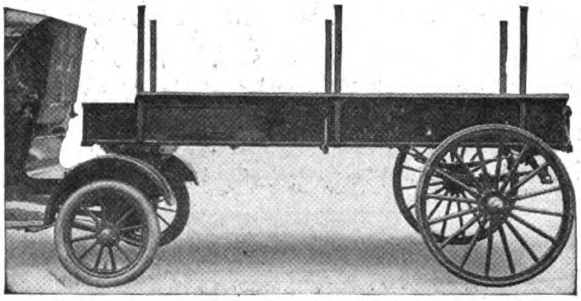
keeps oils and gasoline in perfect condition. Filters every drop of gasoline pumped; measures accurately; is rapid, durable and a paying addition to every garage.

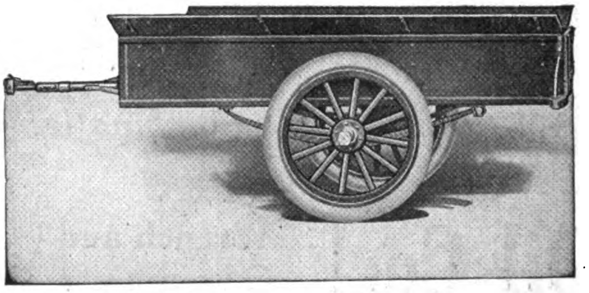
Built for any capacity or requirement.

Write today

**S. F. Bowser & Co., Inc.**
Fort Wayne, Indiana, U. S. A.

Sales Offices in All Centers — Representatives Everywhere





# Haul a 3000-lb. Load With Your Ford Car

A Ford runabout equipped with a Rocking Fifth Wheel, will have light truck capacity when used with **STOCKBRIDGE** 2000 or 3000 pound semi-trailers, and by uncoupling the body, which can be done in a very few minutes, the machine has all the utility of the pleasure car.

**STOCKBRIDGE Semi-Trailers** are the most practical equipment built. They are designed for truck service. They are operated with Ford economy. They can be coupled or uncoupled by any driver without help. The Rocking Fifth Wheel is easily removed. No time is lost. Simply remove six bolts. The owner has a car or a unit with truck capacity and makes no sacrifice of the qualities of either type of vehicle.

The car and semi-trailer can make 20 miles an hour on good roads and can climb any travelled grade.

**STOCKBRIDGE Semi-Trailers** are constructed for truck service. The bodies are express type, with flareboards or flareboards and stakes. The brief specifications are:

| | 2000 Pounds | 3000 Pounds |
|---|---|---|
| AXLE | 1 5-8 in. square, Timken roller bearings. | |
| SPRINGS | Platform type, 1 3-4 in. wide | Platform type, 2 in. wide |
| WHEELS | 46 in. outside diameter, artillery type hubs, 1 5-8 in. spokes | |
| TIRES | Solid rubber, 1 3-4 in. flat top. side wire | 2 in. flat top. side wire |
| EQUIPMENT | Complete Rocking Fifth Wheel ready for attaching | |
| PRICES | $195, f. o. b. Springfield, Mass. | $225 f. o. b. Springfield, Mass. |

**SPRINGFIELD TRAILER,** 800 pounds capacity, express body, semi-elliptic springs, 1 1-4 in. axle, ball bearings, 12-spoke automobile wheels, 30x3 in. pneumatic tires, price **$105,** f. o. b. Springfield.

**STOCKBRIDGE BODY COMPANY,**
130-6 UNION STREET
SPRINGFIELD, MASSACHUSETTS

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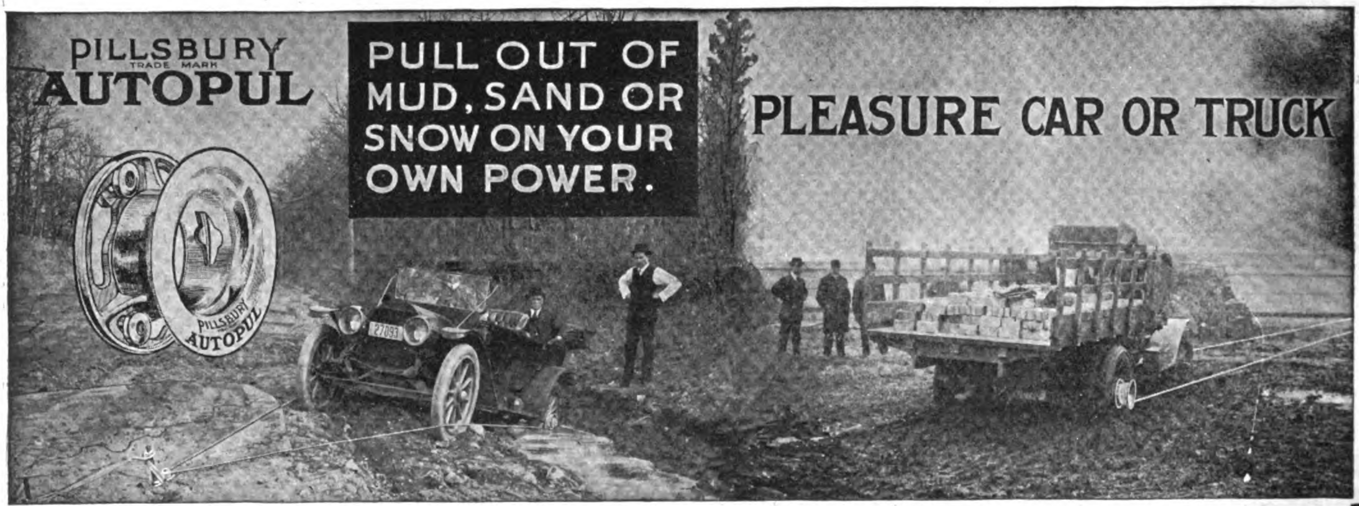


# All Highways are Passable—With a PILLSBURY AUTOPUL

An equipment, either permanent or quickly fitted to any car or truck, with which a ditched or bogged or tractionless vehicle can be drawn to a solid surface.

The outfit can be carried constantly, requires but small space and is very light. Machines can be drawn forward or back as is necessary by their own power.

*LIST PRICE, COMPLETE FITTINGS*

| | |
|---|---|
| Automobile Size, Japanned | $8 |
| Automobile Size, Nickeled | $13 |
| Truck Size, Japanned | $8 to $35 |

Indispensable for any truck, an ideal touring equipment, PILLSBURY AUTOPUL is a practical utility and an economy.

It consists of two winding drums, two special cable hooks and locking bolts and nuts. Stakes and cable furnished as extras, the cable or rope in lengths to meet any requirement.

**PILLSBURY HUBPUL** For Ford and model 490 Chevrolet cars—a combination Hup-Cap, Wheel Puller and Auto Capstan, consisting of two hub drums, two spoke hooks and wheel puller cap screw.

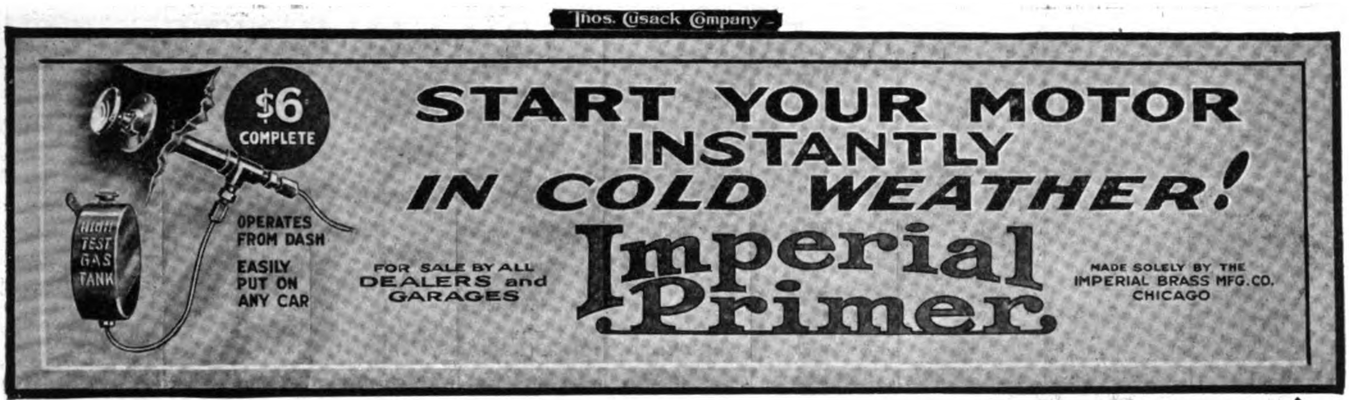
| | |
|---|---|
| Complete Set, Japanned | $4 |
| Complete Set, Nickeled | $6 |

*All quotations f. o. b. Minneapolis, Minn.*

*DEALERS AND JOBBERS: We have a big sales proposition for you. Write for it today.*

PILLSBURY MANUFACTURING COMPANY, Minneapolis, Minn.

Thos. Cusack Company



START YOUR MOTOR INSTANTLY IN COLD WEATHER!

$6 COMPLETE

OPERATES FROM DASH

EASILY PUT ON ANY CAR

FOR SALE BY ALL DEALERS and GARAGES

Imperial Primer.

MADE SOLELY BY THE IMPERIAL BRASS MFG. CO. CHICAGO

HIGH TEST GAS TANK

This is IMPERIAL PRIMER year in every sense of the word. Motorists everywhere, with thoughts focused on problems of winter motoring, are being advised to invest in an Imperial Primer.

## Start Your Motor Instantly in Cold Weather

That pointed suggestion is the keynote of our big national advertising campaign. It is featured on painted boards like the one shown here, and in full-page advertisements to appear in the Saturday Evening Post, issues of November 3rd and December 1st.

Every live dealer should plan to "cash in" on the demand for the Imperial Primer. The selling season is now at its best.

*Write today for full information.*

**IMPERIAL BRASS MFG. CO., 517 S. Racine Ave., Chicago**

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ELECTRIC GLUE POT

Mabey's Dry Heat Electric

## Glue Pot

No flame; no soot or smoke. All danger of fire is eliminated

| Capacity | Price without cover |
|---|---|
| 1 qt. | $ 9.50 |
| 2 qts. | 11.00 |
| 3 qts. | 12.75 |
| 4 qts. | 15.75 |

Century Automobile Cigar Lighter, Complete $1.00 Each, F. O. B. Indianapolis.

*DEALERS—Write For Prices.*

**MABEY'S ELECTRIC & MFG. CO.**

968 Ft. Wayne Avenue INDIANAPOLIS, IND.

---

ONE GALLON
BLUE RIBBON
TRADE MARK
REGISTERED U.S. PAT. OFFICE
GREASELESS CREAM
AUTOMOBILE
BODY GLOSS
DIRECTIONS
INDIANAPOLIS, IND.

## Keeps the Body of Your Car *Shining* Like a Mirror

No Grease to Catch Dust—Does Not Coat the Finish—Best Furniture Polish Made—Use With SPRAY if Desired.

**International Metal Polish Co.**

---

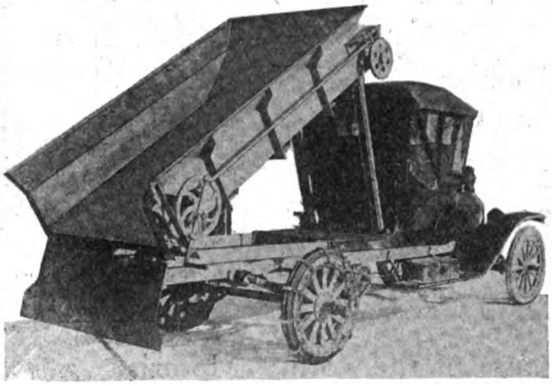
PAUL G. NIEHOFF & CO.
METALLURGICAL LABORATORIES
NORTH CLARK STREET AT KINZIE CHICAGO, ILLINOIS

## Have you received your copy?

It is a *Book of Knowledge* that enables you to become an electrical expert in your automobile work. No more guessing at what you need. It is a complete illustrated catalog of contacts, starter and generator brushes. *Free* to every repair man. This is a line that will build up a splendid business. Ask about our Cash Register of contact parts proposition. Write today.

**PAUL G. NIEHOFF & CO., Inc.**

Metallurgical Laboratories Clark St., at Kinzie, CHICAGO, ILL.



SPECIAL FOR FORD ATTACHMENTS

**Quadruple Worm Gear Drive HAND HOIST**

**Speedy, Powerful, Light in Weight and very Efficient**

Price $206.25 for body and hoist complete ready to mount on chassis frame.

Bodies two sizes, capacity in pounds the same.

Size of the one cu. yd. body 96x44x12 in., straight sides only. Carrying capacity from 2700 to 3000 pounds of gravel, sand or crushed stone.

Size of the two cu. yd. body, 96x44x12 inches with flare of 6 inches. Carrying capacity from 2700 to 3000 pounds of soft coal.

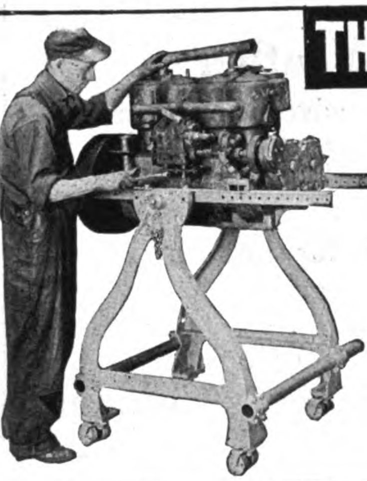
The retail price of either outfit is $206.25.

Approximate weight of either body is 550 pounds.

**Builders of Hoists ranging in capacity from one to five tons.**

***Ask for dealer's proposition.***

**THE AUGLAIZE MOTOR CAR CO.**
**New Bremen, Ohio**



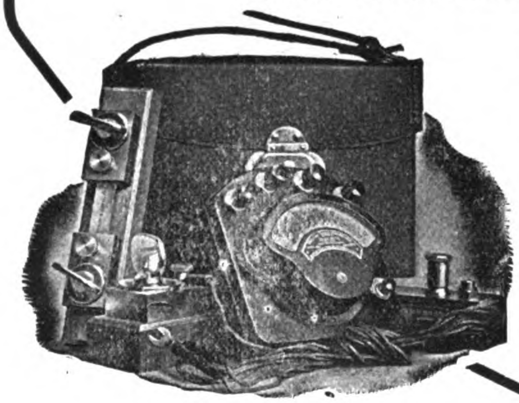
THE CONTINENTAL MOTOR STAND

WOULDN'T it be convenient if an automobile engine had every nut and bolt on a head where it could be reached instantly? There is no such engine, but the Continental Motor Stand does the next best thing. When an engine is mounted on it every part is accessible. It is the one piece of equipment that you need. It is indispensable—there are ten reasons why. Read them. Many of the leading manufacturers have equipped their assembly and service departments with Continental Motor Stands. It is going to pay you equally as well as it has paid them. Write today for prices and for booklet telling of the many uses of this adaptable repair stand.

**CONTINENTAL AUTO PARTS CO.,** KNIGHTSTOWN. INDIANA.

*Ten Reasons Why You Should Have It:*

1. Saves work and satisfies the workmen.
2. Saves time and satisfies the customers.
3. Simplifies imdividual or progressive assembling.
4. Renders every part of the engine accessible.
5. Fits any make of engine, any size.
6. Adjustable to any position.
7. Easily moved from place to place.
8. Requires but little floor space.
9. No projecting parts to interfere with work.
10. Every stand equipped to handle Ford engines.



***Will Somebody Else Get Your Share?***

If you can repair and adjust Electrical Equipment you will get the cream of the garage business and make more money. With the increasing demand for this sort of service you must equip to handle the business or lose it to your more enterprising neighbor.

**Model 280**

Weston **GARAGE TESTING INSTRUMENT**

Is the best, the most reliable, and therefore, the cheapest electrical equipment for you. It enables you to determine promptly and accurately the condition of the electrical equipment of any automobile, just where the trouble is, and just how to remedy it. Write for our **Special Proposition.**

**WESTON ELECTRICAL INSTRUMENT CO., 103 Weston Ave., Newark, N. J.**

*23 Branch Offices in the Larger Cities*

THERE'S JUST ONE WAY to fully realize what "Utility Varnish Renovator" will do for the GOOD of an automobile, and that is—TRY IT YOURSELF. We GUARANTEE it not to injure the finest varnish finish. Write us today for FREE SAMPLE.

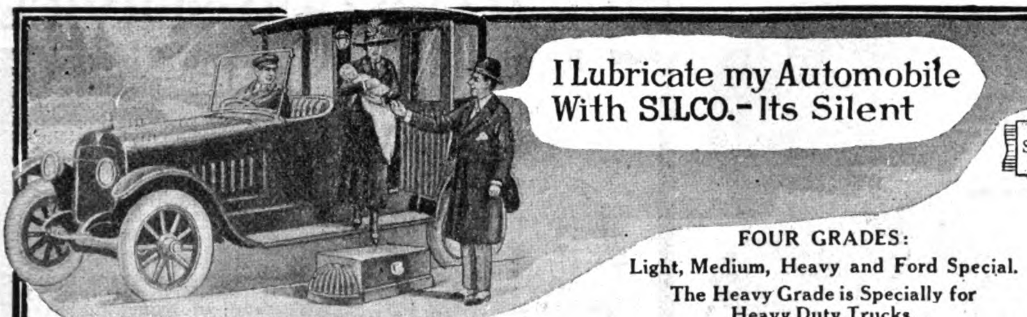
**LIST PRICES**

| | | | |
|---|---|---|---|
| **Quart cans** | **$1.00** | **Twelve ounce bottles** | **50c** |
| **Gallon cans** | **3.00** | **Four ounce bottles** | **25c** |

**Sprayer 25c**

DO YOU HEAR the UTILITY KID signaling you to go ahead and get UTILITY VARNISH RENOVATOR

Manufactured by **POUGHKEEPSIE UTILITIES CORP.** 46 Winnikee Avenue POUGHKEEPSIE, N. Y.


I Lubricate my Automobile With SILCO.- Its Silent

AUTOMOBILE SMOOTH SILCO AS SILK LUBRICANTS

FOUR GRADES:
Light, Medium, Heavy and Ford Special.
The Heavy Grade is Specially for Heavy Duty Trucks.

SILCO is the perfect lubricant for transmission and differential gears. It possesses far greater lubricating properties than ordinary greases. It forms a positive and lasting cushion between all points of contact, and quiets noisy gears. Silco does not leak or drip, and its efficiency is unaffected by heat or cold.

SILCO minimizes friction, and eliminates expansion from heat, thus preventing undue wear on gears and bearings. Cuts repair bills and is guaranteed to afford entire satisfaction.

*Jobbers and Dealers: Our inducements are extremely liberal. Send for further lubricating facts and special trade discounts.*

*WRITE TODAY TO*

**INTERNATIONAL LUBRICANTS COMPANY.**
Manufacturers of SILCO Products
Home Office: 75 State Street, Boston, Mass.
New York Office: 51 East 42nd Street.
THE CONGDON & CARPENTER CO., Rhode Island Distributors, Providence, R. I.

LOOK FOR THIS TRADE MARK
IT PROTECTS THE DEALER AND CONSUMER
**SILCO**
TRANSMISSION AND DIFFERENTIAL GREASE
STOPS THE LEAKS
FINDS THE SQUEAKS
INSURES CAR SERVICE

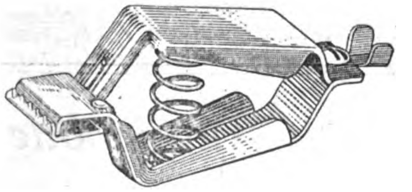
**DO TIRE REPAIRING-**

as a separate business department of your Garage. Business easy to get, grows steadily, and pays well; only small capital required and opportunity everywhere. For best work and surest profits use

**Akron-Williams**
TIRE REPAIR EQUIPMENT

*Used and recommended by 60 Leading Tire Companies*
*Send for booklet No. 12 and catalogue on complete outfits for every size garage.*

**THE WILLIAMS FOUNDRY & MACHINE CO.**
Ash Street, Akron, Ohio



**Hook Up Your Batteries With Universal Battery Charging Clips**

They enable you to charge lighting and starting batteries without disconnecting them from the car.

Made of steel—lead plated—may be used over and over again.
No. 21-A—1½" spread of jaws.
Sample mailed postpaid for 15c in stamps.
Single Lots, Each 20c Lots of 10, Each 15c Lots of 100, Each 12 1-2c

R. S. MUELLER & CO., 431 High Ave., S. E., Cleveland, Ohio.

**Guaranteed Bearings**

BILODEAU BALL BEARING WORKS OF BOSTON

We Exchange Rebuilt Bearings For Old or Worn Ones

We credit the value of worn Bearings toward the price of our rebuilt ones

**THE SERVICE WE GIVE**

We save you time and money and guarantee the quality of the bearings sold. This service is quick and is developed to meet the needs of thousands of garages, service stations and repair shops.
We build bearings of all kinds, experiment and originate bearings for special uses. Our work is unequaled for accuracy and perfection. The materials are the best and service and satisfaction are guaranteed.
Prices are always the lowest consistent with the work. Orders for new bearings of any type or size promptly filled.

**Send today for 1917 catalogue, listing types, sizes and prices of standard bearings. Trade discounts confidential.**

**BILODEAU BALL BEARING WORKS**
66 Stanhope Street, BOSTON MASS.

*Subscribe to*
*THE ACCESSORY AND GARAGE JOURNAL*
*PUBLISHED MONTHLY*
Times Building Pawtucket, R. I.

# Push Your Business —

*I'll Show You How to Increase Your Winter Trade.*

THERE is business all around you. Good, profitable business that will bring in many an extra dollar. Don't wait for spring. Do business all winter. I'm helping garage men and supply dealers to do more business. I'll help you. Write on your business paper that you're ready for more business. I have nothing to sell but service backed by nine years' experience in promoting sales successfully.

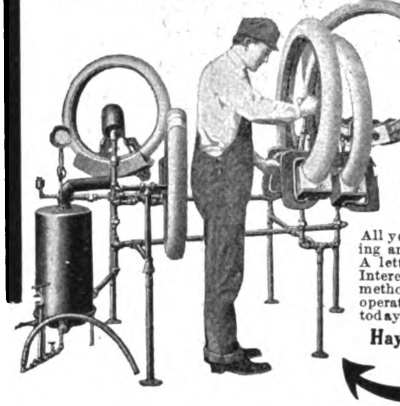
*Write*
**Edward W. Bacon**
**BACON SERVICE**
151 Grand St., New York

---

# GIVE HAYWOOD SERVICE

## Repair and Retread Auto Tires

Here's a standardized method of Tire Repairing—a method nationally advertised and known to motorists. Big money can be made either as side line to your present business or as a business by itself. Equip your garage or store with a **Haywood Plant.** Let it earn extra profits or open a Haywood shop in your locality. **It's a rich opportunity.**



**Write for Attractive Offer.**
All you need is one machine, a little training and you are ready to make money. A letter or post card brings all details. Interesting catalog explains new scientific method and gives particulars of our Co-operative Business Building plans. Write today.

**Haywood Tire & Equipment Co.**
955 N. Capitol Ave.
Indianapolis Indiana

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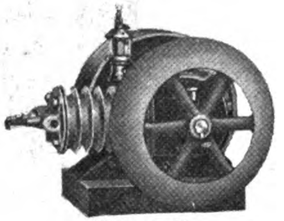
## THE GARAGE Compound Air Compressor

Two in One

Uses less power than ordinary Air Compressors and yet does not cost more.



(Patented)

If you are interested in Air Compressors it will pay you well to investigate this equipment.

**Manufacturers of Gas and Gasoline Engines.**
**Electric Farm Lighting Outfits. Ford Electric Lighting Systems.**
**TOLEDO GAS ENGINE WORKS,** 28-30 Ottawa Street, TOLEDO, OHIO

---

## MOSCO Specialties

## TIMERS . .
## WHEEL PULLERS

**MOTOR SPECIALTIES COMPANY**
**Waltham Manufacturers Mass.**

---

*Dealers' Price* **40c**

Assorted Cup Leathers
3-4 inch to 1 1-2 inch
STEVENS NEW YORK

**Be prepared to repair any size tire pumps, grease and oil guns, pressure systems, etc.**

***STEVENS***

## CUP LEATHER ASSORT

Contains 72 best quality, carefully formed Cup Leathers, sizes ¾" to 1½"

Order through a Jobber

*We also supply standard and special leather washers in any quantity, and complete repair sets for all standard pumps.*

STEVENS & CO., 375 Broadway NEW YORK CITY

---

## Real Harvey Racine Service

**Speed in delivery, quality in materials, dependability in performance, accuracy in fit—these are the things which will win for you the loyalty and friendship of your customers—these are the things which combine to make Harvey Service predominant in the motor trade.**

**There's A Harvey Jobber Near You**

**Drop us a card and we will send you his name and our Spring Book giving complete weights, styles, measurements and prices of over 900 different kinds of springs. Write today—you may need Harvey Help tomorrow.**

**Harvey Spring & Forging Co.**
**851 17th St., Racine, Wis.**

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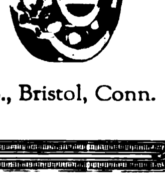
## NEW DEPARTURE BALL BEARINGS

*Strength*
*Stamina*
*Service*



The New Departure Manufacturing Co., Bristol, Conn.
*Conrad Patent Licensee*

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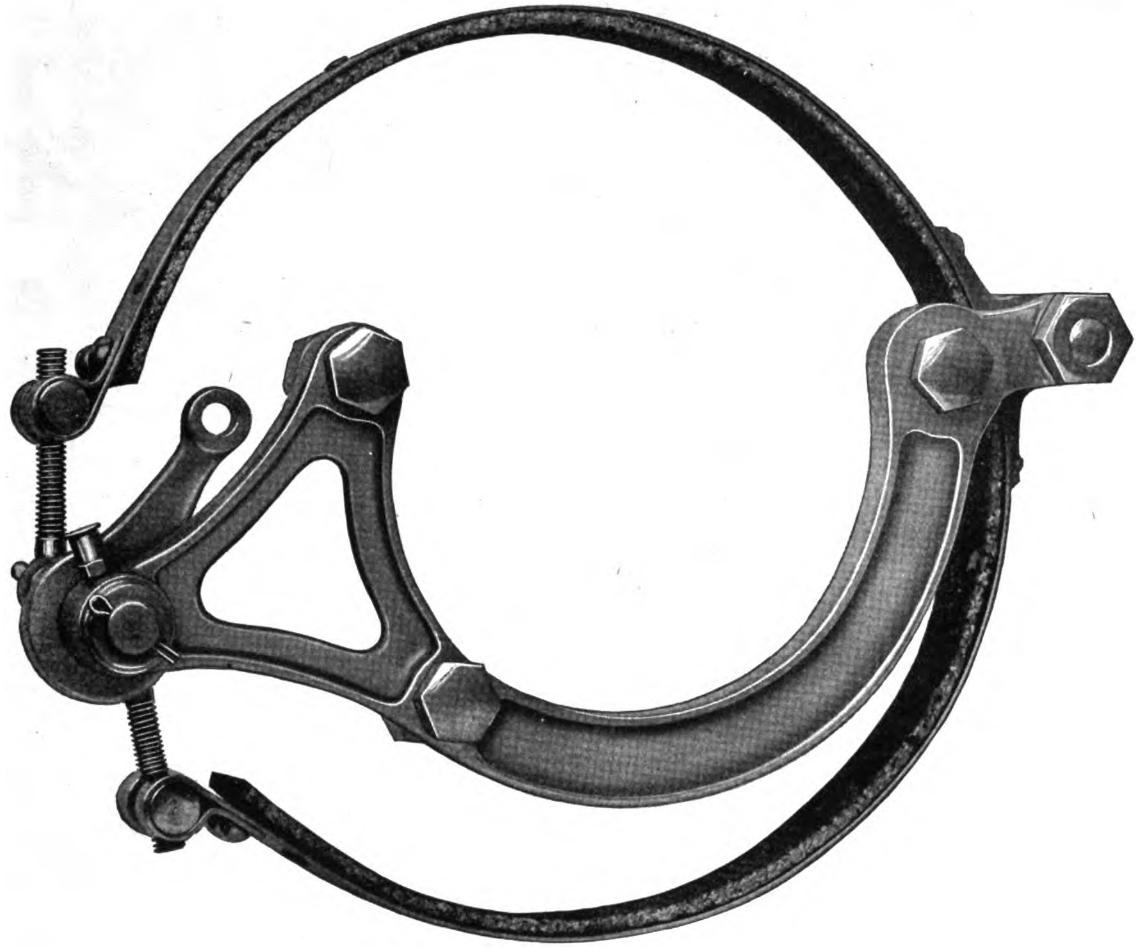
## *The Automobile Journal*

A quality Magazine with prestige and circulation that brings results to advertisers.

TIMES BUILDING
PAWTUCKET, R.I.

# THE BRAKE THAT IS **THERE** WHEN NEEDED



HOLFORD BRAKES
SAFETY FIRST

## The Perfect, Practical, Positive Brake For Ford Cars

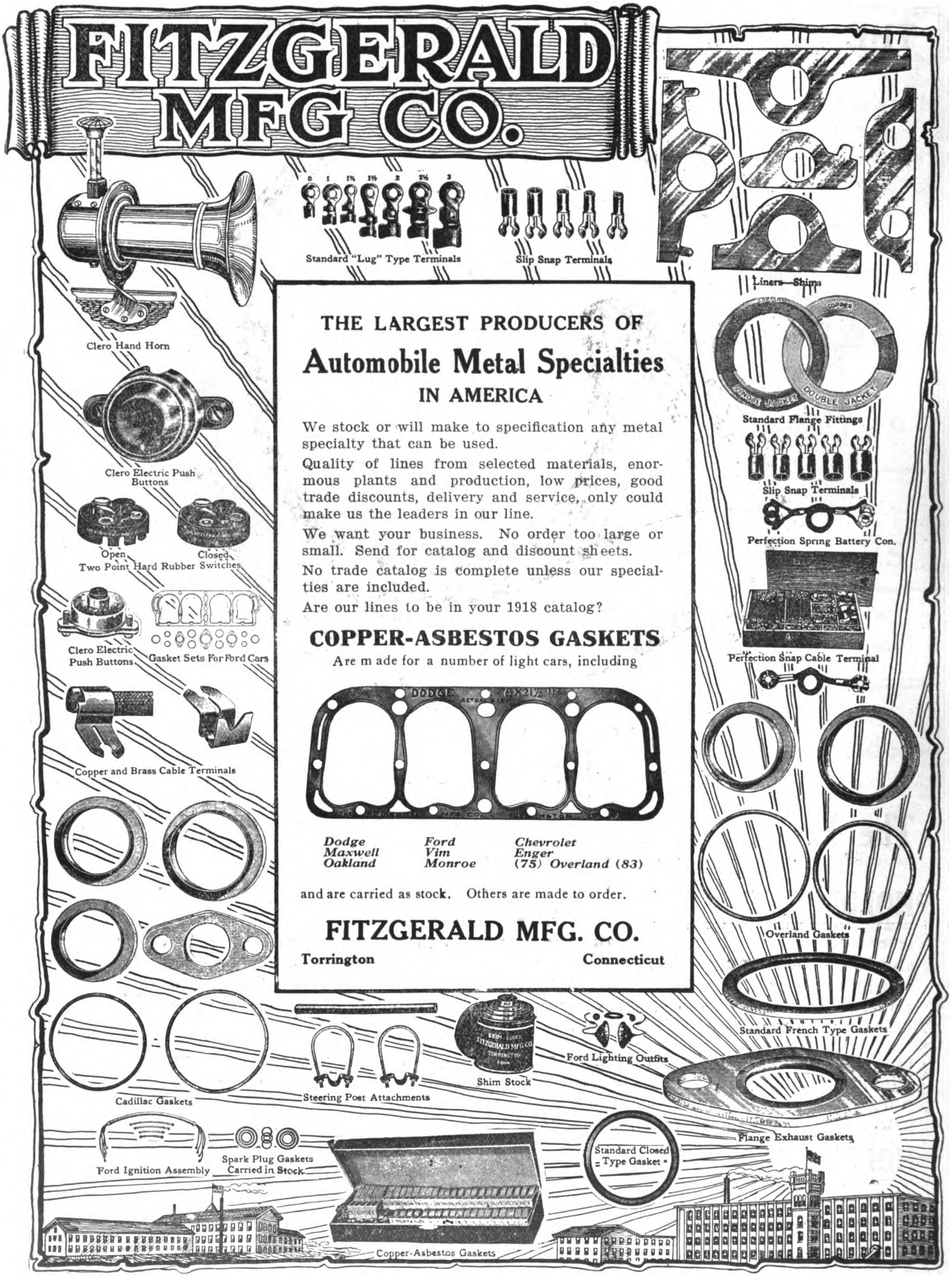
**NOT ONLY MAKES YOU FEEL SAFE, BUT ASSURES YOUR SAFETY**

**HOLDFORD BRAKES** are high-grade external contracting brakes for Ford cars, which can be easily and quickly installed to act from the hand lever as emergency brakes, or from the foot pedal as service brakes. Designed in accordance with the best engineering practice; the band and brace are of steel, the toggle crank and bracket are drop forgings and the lining J-M non-burn. Do not drag when released, no readjustment for wear is necessary and oiling is easy.

The brake usually supplied with this car cannot be depended upon in that "tight corner" or "on the hill." The hand brake wears out quickly and allows the car to creep when being cranked. The constant use of the foot brake quickly wears out the transmission. As the foot brake operates from the drive shaft any accident to the axle or the stripping of gears might mean a serious accident.

**HOLDFORD BRAKES** save wear and tear and will be attached by the wise owner on his pleasure car, delivery car or truck. They will positively stop a Ford with locked wheels on *any grade, at any speed, with any load.* Not necessary to remove old brakes. (When ordering state whether hand or foot brakes are wanted).

**THE G. H. DYER COMPANY - - - Cambridge, Mass.**


FITZGERALD MFG. CO.
Clero Hand Horn
Standard "Lug" Type Terminals
0 1 1¼ 1½ 2 2½ 3
Slip Snap Terminals
Liners—Shims
Clero Electric Push Buttons
Standard Flange Fittings
SINGLE JACKET
DOUBLE JACKET
COPPER
Slip Snap Terminals
Perfection Spring Battery Con.
Open
Closed
Two Point Hard Rubber Switches
Clero Electric Push Buttons
Gasket Sets For Ford Cars
Perfection Snap Cable Terminal
Copper and Brass Cable Terminals
DODGE
Overland Gaskets
Standard French Type Gaskets
SHIM STOCK
FITZGERALD MFG CO.
TORRINGTON CONN.
Shim Stock
Ford Lighting Outfits
Cadillac Gaskets
Steering Post Attachments
Flange Exhaust Gaskets
Ford Ignition Assembly
Spark Plug Gaskets Carried in Stock
Standard Closed Type Gasket
Copper-Asbestos Gaskets

## THE LARGEST PRODUCERS OF

# Automobile Metal Specialties

## IN AMERICA

We stock or will make to specification any metal specialty that can be used.

Quality of lines from selected materials, enormous plants and production, low prices, good trade discounts, delivery and service, only could make us the leaders in our line.

We want your business. No order too large or small. Send for catalog and discount sheets.

No trade catalog is complete unless our specialties are included.

Are our lines to be in your 1918 catalog?

## COPPER-ASBESTOS GASKETS

Are made for a number of light cars, including

| | | |
|---|---|---|
| *Dodge* | *Ford* | *Chevrolet* |
| *Maxwell* | *Vim* | *Enger* |
| *Oakland* | *Monroe* | *(75) Overland (83)* |

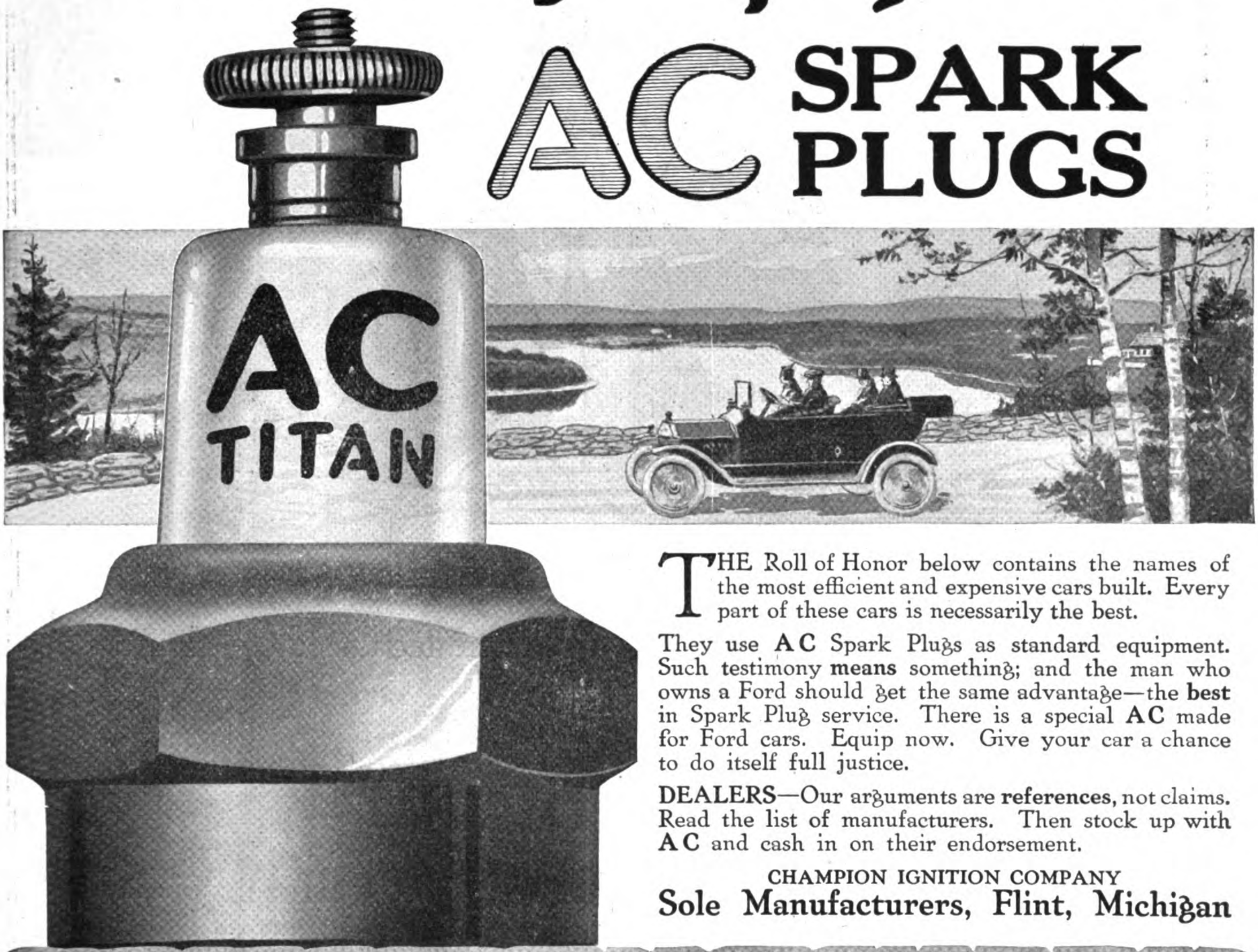
and are carried as stock. Others are made to order.

**FITZGERALD MFG. CO.**

**Torrington** **Connecticut**

# Only Hitting On Three? Ford Owners Avoid This When They Equip With-

## AC SPARK PLUGS



THE Roll of Honor below contains the names of the most efficient and expensive cars built. Every part of these cars is necessarily the best.

They use **AC** Spark Plugs as standard equipment. Such testimony **means** something; and the man who owns a Ford should get the same advantage—the **best** in Spark Plug service. There is a special **AC** made for Ford cars. Equip now. Give your car a chance to do itself full justice.

**DEALERS**—Our arguments are **references**, not claims. Read the list of manufacturers. Then stock up with **AC** and cash in on their endorsement.

CHAMPION IGNITION COMPANY
**Sole Manufacturers, Flint, Michigan**

## List of Manufacturers Equipping With AC

*The Standard Spark Plug of America*

**Cadillac**
**Pierce-Arrow**
**Packard**
**Marmon**
**Hudson**
**Chalmers**
**Hupmobile**
**Chandler**
**Haynes**
**Chevrolet**
**Locomobile**
**Disbrow**
**Dorris**

**Buick**
**Oakland**
**Oldsmobile**
**Nash**
**Kissel Kar**
**Premier**
**Knox**
**Abbott**
**Pathfinder**
**White**
**Daniels**
**Westcott**
Duesenberg

Dort
Cole
Reo
Paige
Peerless
Pilot
McFarlan
Paterson
Davis
Monroe
Singer
Hatfield
Lexington-Howard

Case
Scripps-Booth
Crane-Simplex
Stearns-Knight
Saxon
Stutz
National
Velie
Stephens
Dodge Bros.
Henderson Bros.
Delco-Light
Murray

**Economy**
**Jordan**
**Liberty**
**Jackson**
**Apperson**
**Anderson**
**Phianna**
**McLaughlin (Canada)**
**Gabriel Trucks**
Signal Trucks
Maxim Trucks

**Acme Trucks**
**Riker Trucks**
**Wilcox Trux**
**Republic Trucks**
**Case Tractors**
**Four Wheel Drive**
**Netco Trucks**
**Sterling Trucks**
**Diamond T Trucks**
Federal Trucks
G. M. C. Trucks

American-LaFrance
Old Reliable Trucks
Gramm-Bernstein Trucks
Menominee Trucks
Brockway Trucks
Wisconsin Trucks
Moreland Trucks
Sandow Trucks
Samson Tractors
Stewart Trucks
Robinson Fire Trucks
Titan Trucks

# Over 11,900 retail merchants failed last year

Bankers and wholesalers are interested in these figures. They lose when the merchant fails.

Up-to-date National Cash Registers stop lax methods in Retail Stores—save time, work and money.

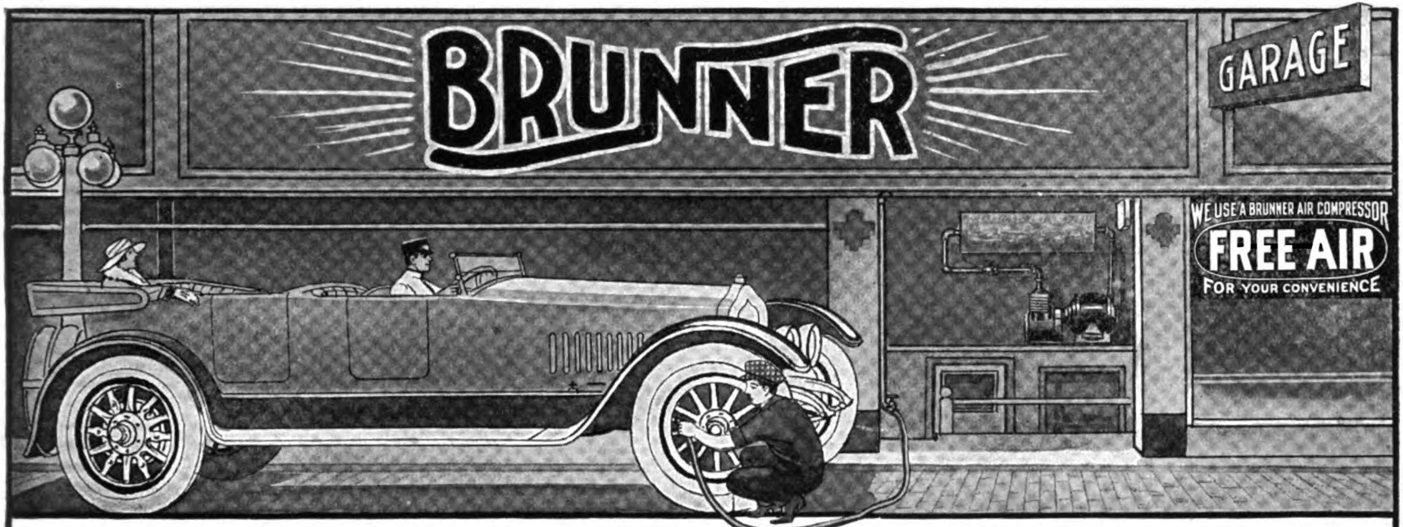
And they enable a merchant without delay to give a complete, reliable statement of his business.

Every banker and wholesaler should investigate the N. C. R. System. He will then recommend it to the merchant.

Our registers are sold on small monthly payments. 5 per cent off for cash.

*Write today for literature* *Address Department 36.*

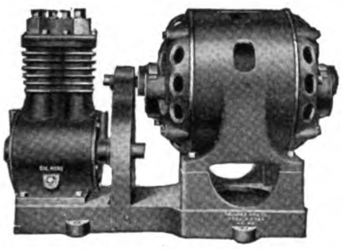
**THE NATIONAL CASH REGISTER COMPANY, Dayton, Ohio**



**The motorist who is Brunnerwise, with tires of the largest size,**
**Knows Brunner Service Satisfies—that's why they call him Brunnerwise.**

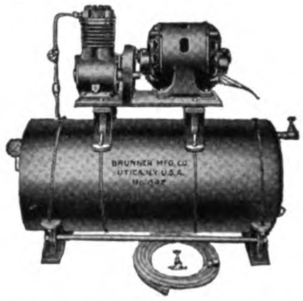
Yes, the Brunnerwise Motorist knows that when he pulls up in front of a garage bearing the Brunner Sign that he is going to find an ample supply of compressed air at his disposal.

Garage efficiency starts at the end of the air hose and the good, healthy flow of air always available at the end of the Brunner Air Hose always inspires confidence and makes new friends for the Brunnerwise Garageman.



*No. 42 Brunner Motor-Driven Air Compressor*

## INVESTIGATE THE BRUNNER AIR COMPRESSOR



*No. 542 Brunner Assembled Motor-Driven Air Compressor*

The Brunner Air Compressor has been making good in the garage ever since the garage business has been a business—it is built in a plant which has always been devoted to the exclusive manufacture of air compressors for the garageman's use. The Brunner Air Compressor is and always has been the leader of all garage air compressors in quality, service and volume of sales—and it is, therefore, worthy of your confidence.

We will be glad to assist you in the betterment of your compressed air service, which should be right up to the mark, if you expect to secure your share of the winter business—and we will be glad to give you any information you may desire regarding the use of compressed air in the garage.

There is a Brunner Jobber covering your territory who is thoroughly familiar with the Brunner Line and who would be glad to recommend it to you—let us send you his name and also one of our complete catalogs and Garageman's Handbook on Compressed Air.

## BRUNNER MANUFACTURING COMPANY

**Main Office and Plant:**
**UTICA, N. Y.**

**Cincinnati Branch:**
**Cincinnati, Ohio**

# SHOW ISSUES

## *SHOW AND SPECIAL ISSUES*

Application for Membership in Audit Bureau of Circulations

The Motor Truck

Devoted to Motor Driven Business Vehicles of All Classes

Vol. VII. PAWTUCKET, R. I. NOVEMBER, 1916 No. 11

3 Great Issues

*National Authority on Highway Haulage*

*December, 1917*
**Annual Dealers' Number**

*January, 1918*
**Specification Number**

*February, 1918*
**Boston Show Number**

Application for Membership in Audit Bureau of Circulations

The Accessory and Garage Journal

30,000 Copies The Issue

## ALL TRADE SHOW EDITIONS

*December 25, 1917*
**Advance New York Show Number**

*January 20, 1918*
**Advance Chicago Show Number**

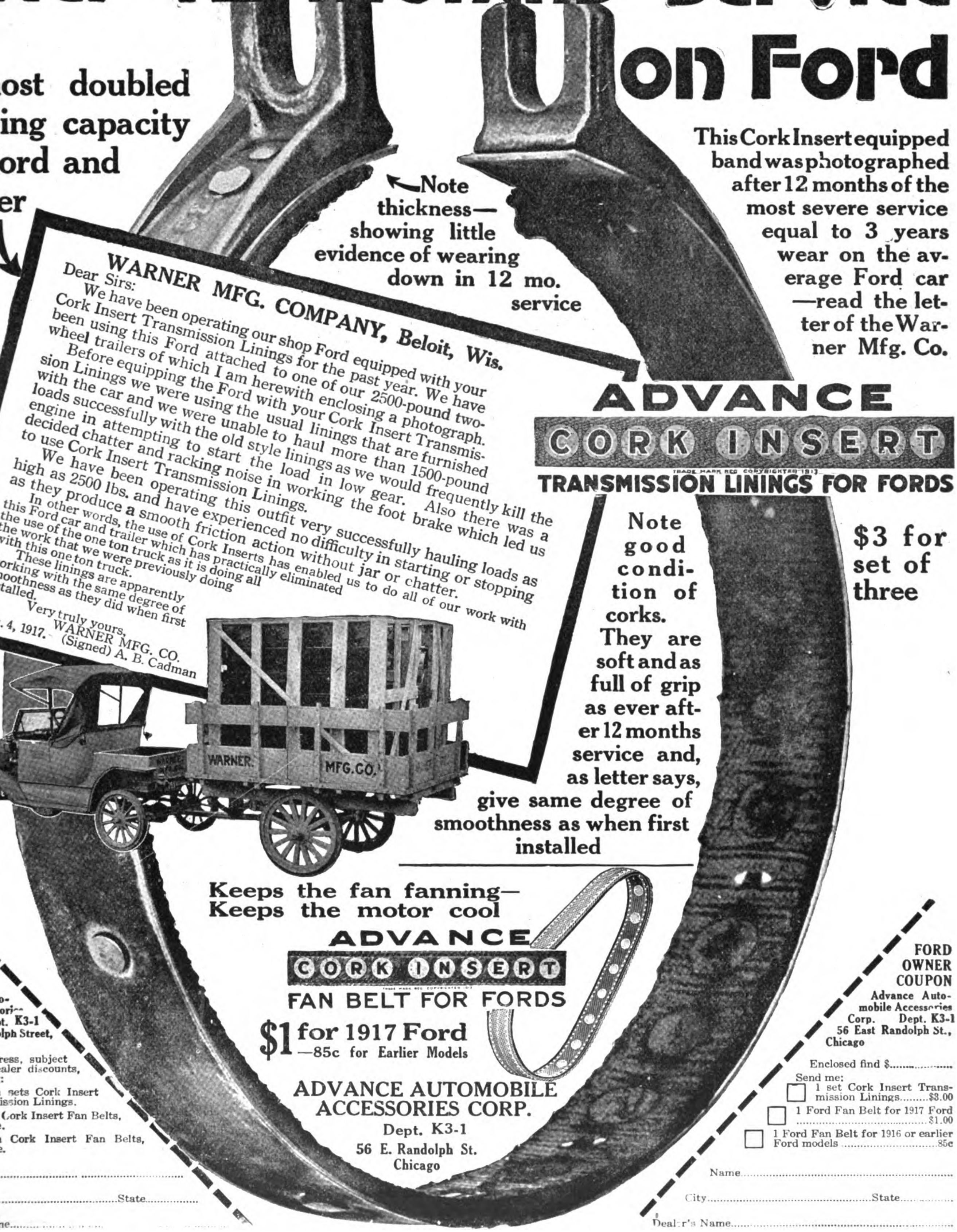
*February 25, 1918*
**Advance Boston Show Number**

*March 25, 1918*
**Trade Buyers Number**

***4 GREAT NUMBERS 4***

AUTOMOBILE JOURNAL PUBLISHING COMPANY
TIMES BUILDING, PAWTUCKET, R. I.

# Same Smoothness after 12 months' service on Ford



**Almost doubled hauling capacity of Ford and trailer**

←Note thickness—showing little evidence of wearing down in 12 mo. service

This Cork Insert equipped band was photographed after 12 months of the most severe service equal to 3 years wear on the average Ford car—read the letter of the Warner Mfg. Co.

**WARNER MFG. COMPANY, Beloit, Wis.**

Dear Sirs:

We have been operating our shop Ford equipped with your Cork Insert Transmission Linings for the past year. We have been using this Ford attached to one of our 2500-pound two-wheel trailers of which I am herewith enclosing a photograph.

Before equipping the Ford with your Cork Insert Transmission Linings we were using the usual linings that are furnished with the car and we were unable to haul more than 1500-pound loads successfully with the old style linings as we would frequently kill the engine in attempting to start the load in low gear. Also there was a decided chatter and racking noise in working the foot brake which led us to use Cork Insert Transmission Linings.

We have been operating this outfit very successfully hauling loads as high as 2500 lbs. and have experienced no difficulty in starting or stopping as they produce a smooth friction action without jar or chatter.

In other words, the use of Cork Inserts has enabled us to do all of our work with this Ford car and trailer which has practically eliminated the use of the one ton truck as it is doing all the work that we were previously doing with this one ton truck.

These linings are apparently working with the same degree of smoothness as they did when first installed.

Very truly yours,
WARNER MFG. CO.
(Signed) A. B. Cadman

Sept. 4, 1917.

**ADVANCE**
**CORK INSERT**
TRADE MARK REG. COPYRIGHTED 1917
**TRANSMISSION LININGS FOR FORDS**

**$3 for set of three**

Note good condition of corks. They are soft and as full of grip as ever after 12 months service and, as letter says, give same degree of smoothness as when first installed

---

**Keeps the fan fanning—**
**Keeps the motor cool**

**ADVANCE**
**CORK INSERT**
TRADE MARK REG. COPYRIGHTED 1917
**FAN BELT FOR FORDS**

**$1 for 1917 Ford**
**—85c for Earlier Models**

ADVANCE AUTOMOBILE ACCESSORIES CORP.
Dept. K3-1
56 E. Randolph St.
Chicago

**DEALER COUPON**

Advance Automobile Accessories Corp. Dept. K3-1
56 East Randolph Street,
Chicago

Send by express, subject to regular dealer discounts, the following:

☐ 1 dozen sets Cork Insert Transmission Linings.
☐ 1 dozen Cork Insert Fan Belts, 1917 size.
☐ 1 dozen Cork Insert Fan Belts, 1916 size.

Name..........................................................

City..............................................State................

Jobber's Name..........................................

**FORD OWNER COUPON**

Advance Automobile Accessories Corp. Dept. K3-1
56 East Randolph St.,
Chicago

Enclosed find $..................

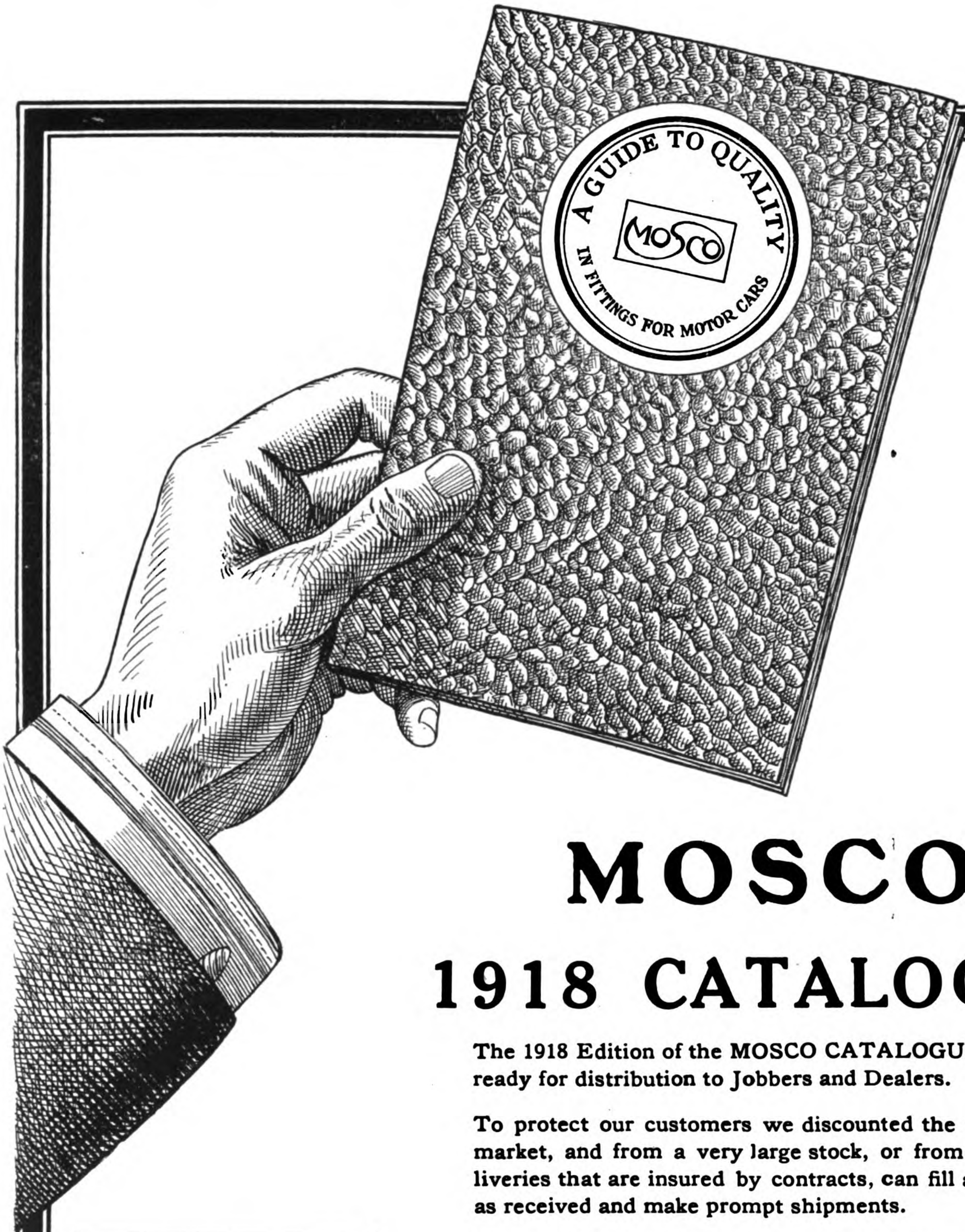
Send me:

☐ 1 set Cork Insert Transmission Linings.........$3.00
☐ 1 Ford Fan Belt for 1917 Ford ......................................$1.00
☐ 1 Ford Fan Belt for 1916 or earlier Ford models ..............................85c

Name..........................................................

City..............................................State................

Dealer's Name..........................................


A GUIDE TO QUALITY
MOSCO
IN FITTINGS FOR MOTOR CARS

# MOSCO

## 1918 CATALOGUE

The 1918 Edition of the MOSCO CATALOGUE is now ready for distribution to Jobbers and Dealers.

To protect our customers we discounted the materials market, and from a very large stock, or from early deliveries that are insured by contracts, can fill all orders as received and make prompt shipments.

MOSCO QUALITY in all specialties, parts and equipment will be maintained to the highest trade standard, and our service to patrons will be satisfactory and above criticism.

We suggest to all customers that they order promptly, for this will insure them against delays in transit. Catalogues and discount sheets mailed at request.

**MOTOR SPECIALTIES CO.**

**WALTHAM MASSACHUSETTS**

***A Few of the 1918 Mosco Specialties:***

- Improved Bemus Ball Contact Timer.
- Bemus Timer—Auto Type.
- Bemus Timer—Marine Type.
- Mosco Timer for Ford Cars.
- Mosco Floating Plunger Wheel Puller.
- Mosco Valve Grinder.
- Mosco Auto Lock.
- Mosco Fitting for Ford Cars.

**H-M**

# Adjustable METAL Radiator Covers for All Model Ford Cars

A thoroughly practical adjustable METAL Radiator Cover. Made of sheet metal, lasts for years and pays for itself in one winter's saving in fuel. Operates from foot-board on dash of car—no need to leave seat. Will keep radiator warm for hours in coldest weather. Attached by anyone in few minutes.

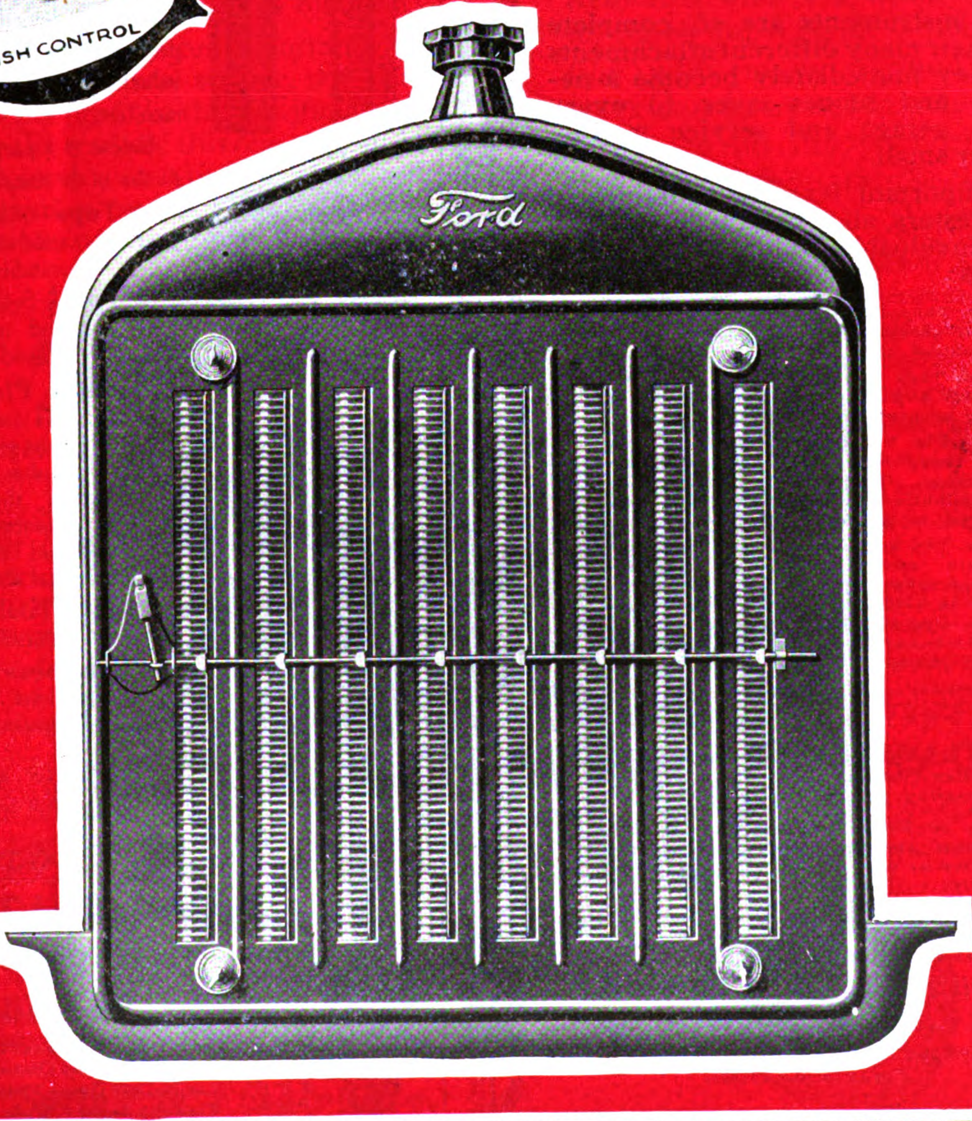
**Price $5.00**

**DEALERS**—Write at once for our proposition showing how to turn your winter months into profits. H-M Adjustable **Metal** Radiator Covers are selling by the thousand. Get your share of these quick, sure profits by acting **at once.** Write today—it means money in your pocket.

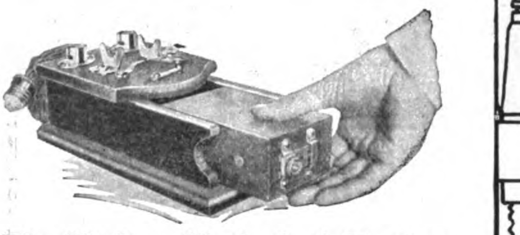
H-M MANUFACTURING COMPANY

Dept. 27 122 So. Michigan Avenue, Chicago

DASH CONTROL



IT TESTS AND TELLS



*The Modern Method of Testing*

IT WILL FIND THE TROUBLE

## The Jefferson Ford Unit and Combination Testers

designed for testing automobile lamps, electric horns, spark plugs, Ford coil units, various types of coils, battery jars, locating short circuits, grounds, etc., and for starting Ford engines in cold weather.

These instruments are so complete with their many different attachments that they immediately become a necessity and money-saver to every dealer, garage and service station, large or small.

The important features contained in these testers, all of which go to make them invaluable to the trade, are as follows:

**1st. They are so flexible that in general garage work there is hardly a problem that they will not solve.**

**2nd. They are as compact, trouble-proof and simple to operate as they are accurate and reliable.**

**3rd. The No. 28 Tester is designed to be connected with the alternating current lighting circuit, thereby eliminating the use of storage batteries or dry cells.**

**4th. The No. 28 Tester tests Ford coil units under alternating current. Ford coils are wound for and operate in actual service under alternating current. For a positive test and adjustment, why not USE alternating current?**

For the many dealers, garages, service stations, etc., not having alternating current at their disposal we are furnishing the No. 30 Ford Unit and Combination Tester to be used in connection with storage batteries or dry cells.

**No. 28 Ford Unit and Combination Tester (for use with alternating current)....... $8.00**

**No. 30 Ford Unit and Combination Tester (for use with storage batteries or dry cells).................... $6.00**

***Write today for detailed descriptive matter and terms.***

**JEFFERSON ELECTRIC MANUFACTURING COMPANY**

426-430 S. Green Street CHICAGO, ILL.

*Northern Electric Company, Limited*
*Canadian Distributors*

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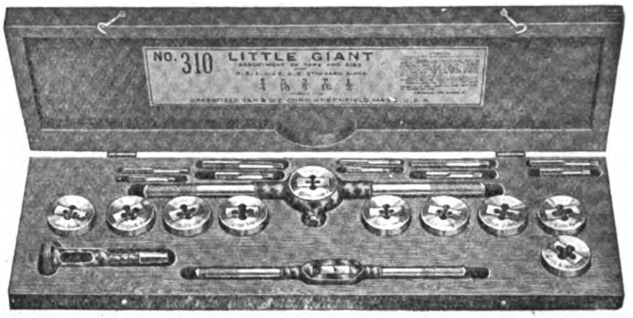
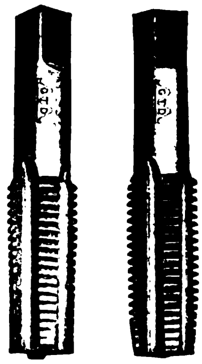


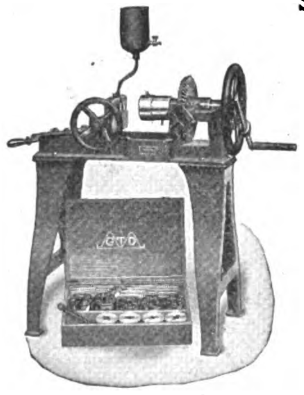
Little Giant Screw Plate

## The Complete Line of Threading Tools



Hand Taps

Little Giant Die



G.T.D. Threading Machine

Whatever your requirements in the screw cutting line may be, we can meet them, as our line is the most complete in the world. Bear in mind that our service in the threading tool line is unexcelled.

Ask for a copy of our No. 37 general catalog which contains besides the products listed below many tables of valuable information for garage repair men, etc.

Below is a partial list of products shown in the catalog.

**Taps**—All kinds, for hand and machine use, in all thread standards.

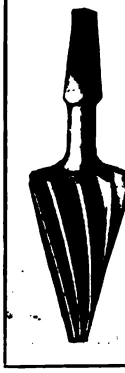
**Dies**—Several styles, for hand and machine use, in all thread standards.

**Screw Plates**—Many styles and assortmensts for bolts, nuts and pipe, with Automobile (S.A.E.), U.S.S. or V threads, combination assortments with both U.S.S. and S.A.E. thread taps and dies.

**Pipe Tools**, Wrenches, Vises, Cutters, Stocks and Dies.

**Reamers**—Hand and Machine, bit brace and straight shanks, all types.

Send for a catalog for ready reference.

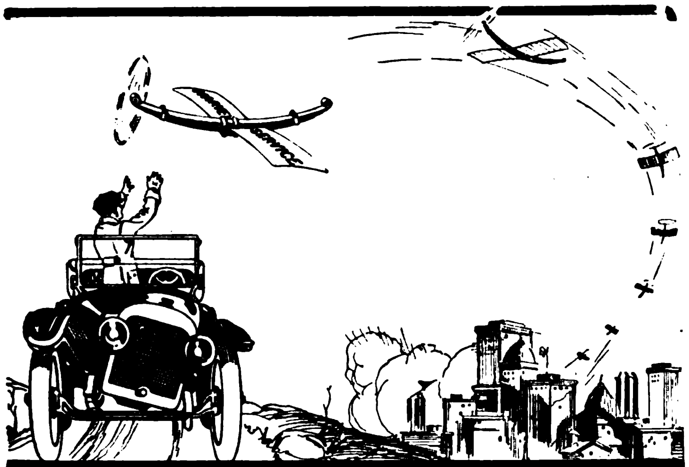


G. T. D.
Burring
Reamer

**Greenfield Tap and Die Corporation**

**Greenfield, Mass.**

**New York, 28 Warren St.**
**Chicago, 13 South Clinton St.**
**London, 149 Queen Victoria St.**
**Canadian Factory, Wells Brothers Company of Canada, Ltd., Galt, Ont.**



## Harvey to the Rescue

A broken spring—a frenzied customer calling for help—demanding a new spring "rush"! It's an odd size; you have none in stock to match it!

And yet, you realize the importance of giving this customer real service, not particularly for the profit in this one job alone, nor even for the trade of this one customer, but because service at a time like this will bring the word-o'-mouth publicity which follows naturally when a customer is pleased.

*So you call* Harvey RACINE

to the rescue. There's a Harvey Jobber near you, you get him on long distance, in a few words tell him your needs, and then turn to your customer with the satisfied feeling of work well done, because you know that already the exact spring you want and the best spring money can buy is speeding to you.

"That's service"! says the customer. And when his car is on the road again he tells his friends about it and they say with him, "That's service"!

That *is* Service, Harvey Service, and it's always ready to help you build a business that will be respected far and near. They may forget the name of the spring you used but the memory of the service you have given will never be lost.

**There's A Harvey Jobber Near You**

Drop us a card and we will send you his name and our Spring Book giving complete weights, styles, measurements and prices of over 900 different kinds of springs. Write today —you may need Harvey Help tomorrow.

**Harvey Spring & Forging Co.**
**915 17th St., Racine, Wis.**

"NORMA"

## BALL BEARINGS

(Patented)

Silent, smooth, dependable service demands ample power at all times available and a lighting system at all times dependable. Dissatisfaction with many a good car and truck can be traced to defective performance on the part of ignition and lighting apparatus.

**The service capacity of a magneto or lighting generator depends upon the service capacity of its parts. The highest-grade magnetos and generators are safe-guarded against bearing troubles by the use of "NORMA" Ball Bearings—the speed bearings of proved serviceability.**

**Be *Sure*—See That Your Electrical Accessories Are "NORMA" Equipped**

**THE NORMA COMPANY OF AMERICA**
**1790 BROADWAY NEW YORK**
**Ball, Roller, Thrust and Combination Bearings.**

# It's the Large Radiating Surface—and the Thermostat

A large radiating surface is the secret of success in a car heater. Not a small surface red hot, that burns your feet while the rest of you freezes; but a large surface giving off the proper warmth to make you comfortable all over.

The Thermo-Heater has the largest and most equitably warmed radiating surface. It is a foot and body warmer, not a shoe burner.

And you can regulate the heat, so as to maintain just the temperature you want, by means of the Thermostat attachment. You can let in a degree of heat to warm you on the coldest days, and then when the weather moderates you can tone the heat down to suit your comfort.

Dealers will do well to consider these points in selecting the heater they are going to handle in 1918.

Many leading cars are equipped with these heaters. If your car has no heater as standard equipment, recommend the Thermo-Heater to your customers. It will add to their pleasure in the car.

The Thermo-Heater is easily attached. It sets on the floor—not in the floor. There are but three holes to bore, and the pipes to connect.

**Description** -
Model "A," 28" long, 4" wide, 1" thick, Cast Iron Black Enameled—$12.00.
Model "B," 28" long, 4" wide, 1" thick, Polished Cast Aluminum—$18.00.
Model "C," 14" long, 8" wide, 1" thick, Cast Iron Black Enameled—$12.00.
Model "D," 14" long, 8" wide, 1" thick, Polish Cast Aluminum—$18.00.

**Cox Brass Manufacturing Co.,**
(ESTABLISHED 1872)
N. Pearl & Van Woert Streets, Albany, N. Y.
Branch Office: 1733 Broadway, New York City

# EASY TO PUT UP

## Ford Model

# "AUTATOP"

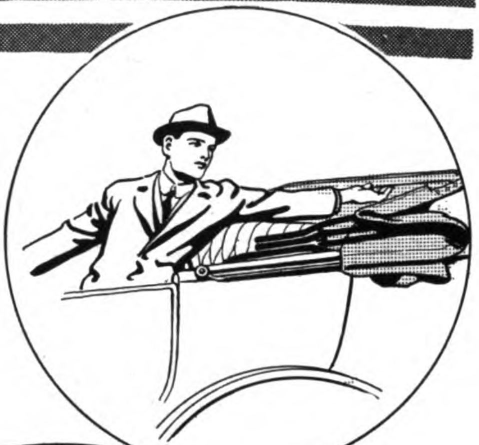
A lift with one hand—a push with both and the AUTATOP is in place.

This ease of operation will appeal to most of your Ford customers, particularly when you show them how it "dresses up" a Ford.

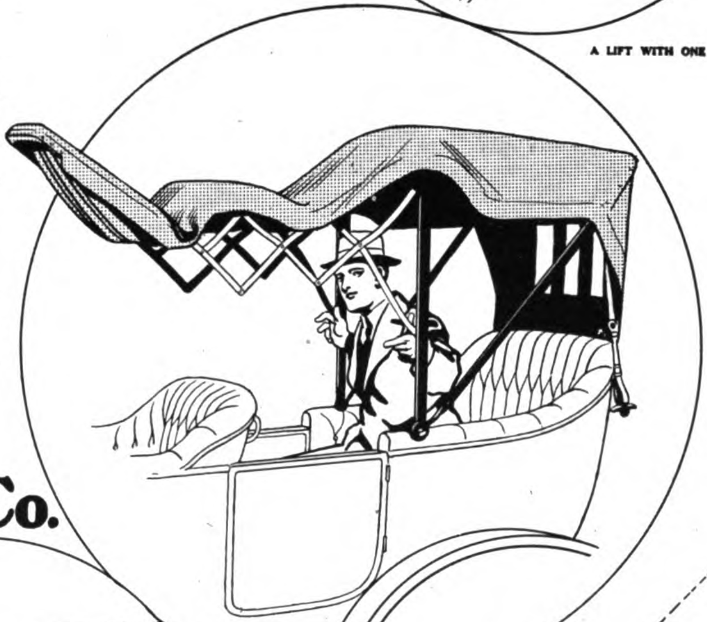
AUTATOP Ford model equipment includes a special bracket that makes a rain vision or ventilating windshield out of the ordinary Ford type.

Selling AUTATOPS (Ford model) you can talk Appearance, Quality, Convenience. The dealer proposition is well worth listening to. Write us today.

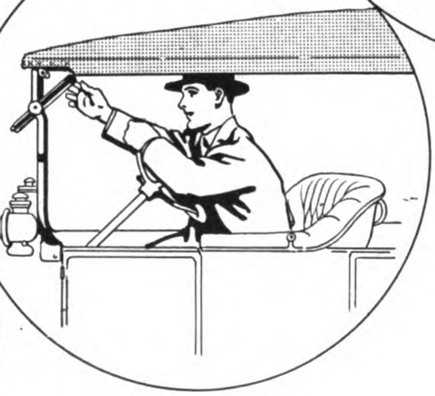
**OneHandAutoTopCo.**
INCORPORATED
**Buffalo, N. Y.**



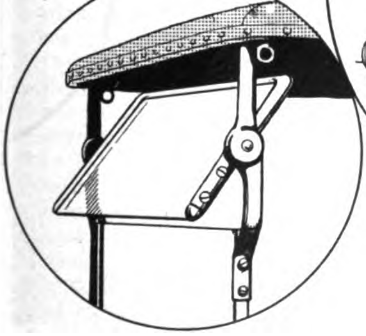
A LIFT WITH ONE HAND—



A PUSH WITH BOTH AND—



THE AUTATOP IS IN PLACE



SPECIAL WINDSHIELD BRACKET
*(furnished)*

ONE
HAND
AUTO TOP
CO., Inc.

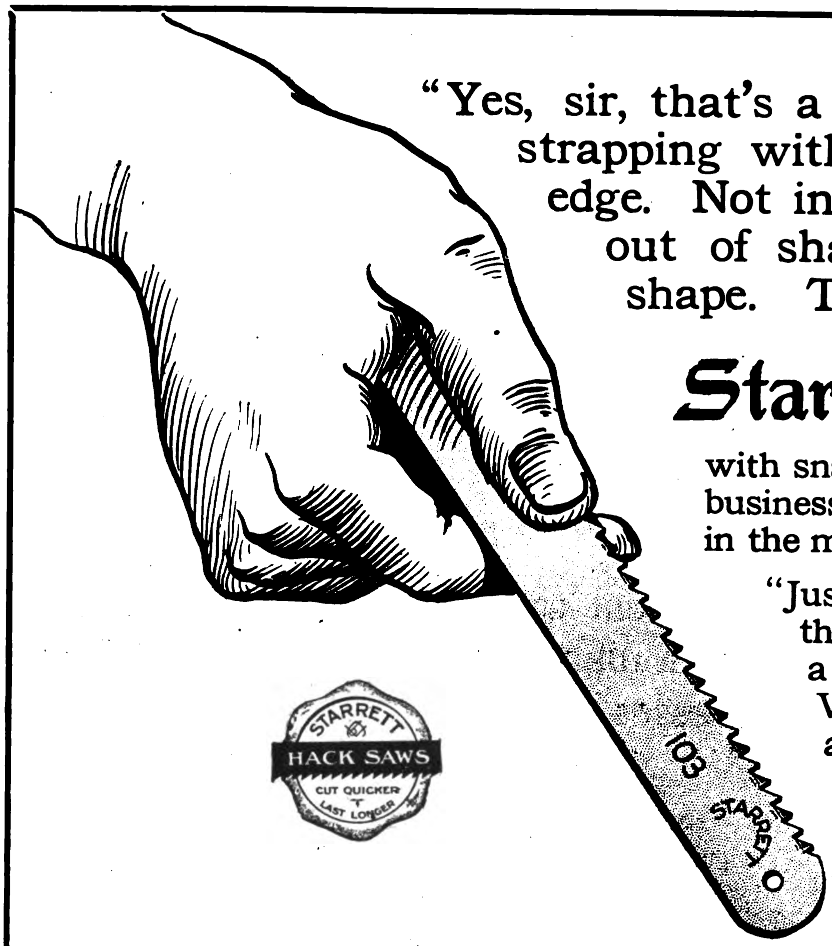
Gentlemen:
Please send us the details of your sales plan for the Ford Model Auto Top

Name.................................................

Address.................................................

Business.................................................

Garage? Car Dealer? Accessory Supplies?



"Yes, sir, that's a real hack saw. Not strapping with notches cut in the edge. Not inferior steel that bends out of shape and stays out of shape. That's a

## Starrett Hack-Saw

with snap and whip to it that means business from the time it gets its teeth in the metal until the cut is finished.

"Just a hack saw, you say. But this common name won't do for a tungsten steel blade like this. Why every tooth in it is milled and set just as if this hack saw were to establish the Starrett reputation.

"And it fits its job, too. Maybe you don't think that's important, but try it yourself.

STARRETT HACK SAWS CUT QUICKER LAST LONGER

"You don't call in a grocer when you have a toothache. But there are some mechanics who try that stunt with hack saws—put a brittle, coarse-toothed blade on a piece of tubing and then wonder why it strips. Or use a fine-toothed saw on brass rod and wonder why the teeth clog and the blade snaps.

"No sir, you can't treat hack saws mean any more than you can people; and that's another reason why I like Starrett Hack Saws. You don't need to go wrong. The L. S. Starrett Company have good saws and they know how to pick the one that does the work best. Guess that's why they say that Starrett Hack Saws *cut faster and last longer.* I know they do."

Send for catalog No. 21 GT.

**The L. S. Starrett Co.**
The World's Greatest Toolmakers
ATHOL, MASS.

NEW YORK LONDON CHICAGO

42-738

# The ACCESSORY and GARAGE JOURNAL

Devoted Exclusively to the Automobile Trade and Allied Interests.

VOL. VII. PAWTUCKET, R. I., NOVEMBER, 1917 No. 7

## Motor Car Program Develops Under New Board

### Automobile Industries Committee Takes Charge of Conscription and Retailing Details.

The vast manufacturing facilities of the motor car industry have been coupled up with the government's war preparations through the committee appointed to represent the entire automobile industry. This committee is known as the Automobile Industries Committee, and it has opened offices and established headquarters at 509 Seventh street, Washington, in the Second National Bank building. It is composed of Chairman A. W. Copland of the Detroit Gear and Machine Co., John R. Lee of the Ford Motor Co. and Hugh Chalmers of the Chalmers Motor Co. Mr. Copland was appointed by the Motor and Accessory Manufacturers' Association to represent all the parts and equipment makers. Mr. Chalmers was selected by the National Automobile Chamber of Commerce as representative of the complete vehicle makers, and Mr. Lee was delegated by Mr. Ford to represent the Ford Motor Co., which is already extensively engaged in war work.

The Automobile Industries Committee will furnish the War Industries Board with such information regarding the equipment and facilities of the different plants as will enable the government departments to assign each manufacturer the kind and quantity of work he desires and is best fitted to undertake, thereby making it unnecessary for the government autocratically to commandeer all of the facilities of any plant, to limit definitely the production of automobiles on a percentage basis, or to deny a sufficient supply of coal or materials of any kind to keep the factories in operation. This will hold intact all the manufacturing organizations so that they will be of most value to the government and also assure dealers throughout the country of a continued, although decreased supply of cars.

The conscription of motor manufacturing facilities is expected to be gradual and to begin as soon as details are worked out. One of the board's hardest problems is to arrange curtailment of the manufacture of pleasure cars, involving the existence of sales agencies with an estimated investment of $600,000,000 and scattered in every town and city in the country. Government tendencies have been to disregard the essentiality values with which automobile men regard all passenger vehicles. The priority shipment order showed the radically different opinion held by government officials. The business value and necessities of cars to their owners is esteemed in every other quarter, yet the government does some things that startle because everybody does not have a proper understanding of what the government program is. The government is going to lay a heavy hand on non essential business, yet there is great confidence that the automobile business is not to be branded a non essential industry. It will be susceptible to changes and the changes will come about systematically.

H. L. Horning, chairman of the Automotive Products Section of the War Industries Board, will conduct the relations between the board and the Automobile Industries Committee. J. F. Replogle has been appointed director of steel products, handling orders and distribution.

## Freight Cars Will Not Be Shut Off

### Priority Administrator Declares They Will Not Be Denied to the Auto Industry.

Robert S. Lovett, administrator of the Priorities Transportation Act, has issued a statement concerning the report that he would deny the use of freight cars to the motor car industry. He says:

"The report that I am contemplating an order shutting off cars from the automobile industry, is without any foundation in fact. I said a week ago that I did not have in mind any transportation order treating any industry as non essential, since Priority Order No. 2 went as far as it seemed to me wise to go in dealing with so-called non essentials by transportation orders. That statement still stands."

## New Chalmers Car Organization Is Announced

### Carl H. Pelton to Help President Flanders at Head of the New Personnel.

The personnel of the new organization that is handling the affairs and production of the Chalmers car has been announced as follows:

President, Walter E. Flanders of the Maxwell Motor Co.; assistant to president, Carl H. Pelton; treasurer, Walter M. Anthony; comptroller, John Flint; general auditor, J. H. Johnson; director of sales in charge of advertising, Thomas J. Toner; assistant sales manager, C. H. Becker; production manager, Charles Adams; general superintendent of factory production, E. A. Taylor; superintendent of production, W. K. Swigert; engineer, William Kelly; engineer, E. J. Miles; assistant engineer, H. M. Jerome; purchasing agent, Roy M. Hood; advertising manager, Gordon Muir; general supervisor of material, J. R. Collins.

### ENTERS AIR SERVICE.

Ralph Hoagland, the well known athlete, formerly of the King Auto Sales Co. in Detroit, has entered the air service of the Signal Corps in a civilian capacity.

### HUDSON AUTO LAMP TAKES ON FOREIGN BUSINESS.

The Hudson Auto Lamp Works of 1648 Broadway, New York, doing a large volume of business and repair work on automobile radiators, lamps, mudguards, both in the nature of repairs and reenameling, are beginning to branch out and do foreign business in the shape of work sent them from France and Belgium by the Y. M. C. A. and the American Red Cross.

This company employs over 40 high grade men, skilled in their respective lines, and has a complete line of machinery and newest type ovens. Many radiators, seemingly damaged beyond repair, are repaired and enameled in this plant so that their appearance is hardly distinguishable from new.

# Add War Taxes to Cost, Webster Says

### Commissioner of N. A. A. J. Advises Dealers That Revenue Exactions Are Legitimate Expenses.

Commissioner William M. Webster of the National Association of Automobile Accessory Jobbers has issued a special bulletin in which he enumerates 13 different kinds of taxes that have been levied and which will affect the profits of the accessory dealers and jobbers. These taxes, he contends, come under the head of legitimate expenses and, therefore, should be added to the cost of doing business. In addition to these increases in the cost of doing business, such as increased postage, telephone, freight, express, railroad taxes and the excess profits and war taxes, there also must be taken into consideration the cost of a slower turnover of goods, higher material costs, higher wages and other factors that have grown out of the war situation.

## A. A. A. SANCTIONING NO MORE AUTOMOBILE RACES.

As the result of the action of the American Automobile Association in deciding to sanction no more automobile racing during the period of the war, the sport will practically be abandoned for an indefinite period. The organization was influenced to this action owing to the government's need of mechanics, some 1200 skilled men being enrolled in the association as racing men.

## KELLY-SPRINGFIELD TIRE BIDS.

The Kelly-Springfield Tire Co. has taken bids for the second time on the construction of a new plant at Cumberland, Md., calling for 10,000 tons of structural steel.

## TENNESSEE CARS AND TRUCKS.

The State of Tennessee now has a motor car for each 45 of its population. During the present year there were registered in that state 48,014 motor cars and trucks as compared with 31,500 for last year.

## GOVERNMENT SEIZES MACHINE TOOLS WORTH $10,000,000.

The government through the Machine Tool Section of the War Industries Board has seized 600 machine tools in various warehouses at seaports which were destined for Sweden. These tools, having a value of about $10,000,000, have been stored in these warehouses for over a year. Many of the machines were turned over to the Simplex Automobile Co., which is manufacturing 4000 Hispano-Suiza engines for the Aircraft Production Board.

## ITALY RANKS SECOND AS AUTOMOBILE EXPORTER.

Italy now ranks second in the world as an exporter of automobiles. During 1916 she exported $16,835,650 worth of motor vehicles as compared with $6,836,187 in 1913. In 1913 France was the largest exporter of motor vehicles in the world, the United States second, the United Kingdom third and Italy next, but now this country is first, Italy second, United Kingdom third and France next.

# Dictator of Waste Reclamation Urged

### National Junk Authority May Govern Waste Material Industry, Totaling More Than $1,500,000,000.

It is proposed in Washington to appoint a National Junk Dictator, to have charge of the movement for the furtherance of thrift in materials and waste reclamation as applied to the mass of maetrial usually known as junk. The conservation of materials in automobiles and parts is one of the big items in the annual amount of business done in the various branches of the waste material industry, which totals more than $1,500,000,000, according to conservative estimates. Coordinated work and governmental direction, it is believed, would effect enormous savings in material and money.

## DEALER CHANGES IN CHICAGO.

Several changes have been made recently in dealer representation in Chicago. The factory sales offices of the Elgin will distribute that car in the territory, as its former representative, Louis Geyler, has given it up and taken on the Dort. The latter agency was left open when Otto C. Owen retired from the field. The James Levy Co., handling the Chalmers, has acquired the local distribution of the Buick, operating under the Buick Chicago branch.

## THE ONE HAND TOP.

Something radically new in automobile tops is introduced by the One Hand Auto Top Co., Inc., of Buffalo, N. Y. This type of automobile top is made in two styles, known to the trade as the Autatop and the One Hand Top. With the exception that the One Hand Top is fitted with a hand crank, both styles are the same construction.

The top has a lattice work construction, similar to the "lazy tong" construction of the ordinary telephone extension that is now in use. The lower member operates up and down in a groove cut in the bow socket. By releasing this member the top can be lowered in a few seconds.

# New Discovery of Venezuelan Rubber

### Large Forests of the Para Rubber Tree at Headwaters of the Orinoco River.

The U. S. Commerce Department is investigating a new source of rubber reported in the forests of Hevea, at the headwaters of the Orinoco and Rio Negro rivers, in Venezuela. It is stated on botanical authority that there are large forests of the Para rubber tree in that region.

The Hevea, or Para rubber tree, is known to be by far the most important of all the rubber bearing trees of the world. As there has been much waste and destructive tapping of the wild trees in the upper Amazon, the centre of Para production has begun to pass to the East Indies, where extensive plantations have been established in the past 17 years.

Botanical authorities say they are getting rubber in Northern and Central Venezuela from the Mierandra genus, one closely allied to the Hevea. Rubber planting in Central and South America is restricted by labor conditions, which cannot compete with the cheap coolie labor and easy living conditions in the East.

## PHILADELPHIA'S SHOW IN WANAMAKER GARAGE.

Just as the show committee of the Philadelphia Automobile Trade Association was preparing to abandon its plans for holding an exhibition this year, owing to the fact that the government had taken over the Commercial Museum, which the members had planned to use, the use of the big Wanamaker Garage on Walnut street, at 23d street, was offered free of cost by the Philadelphia Press and Evening Telegraph. The offer was made by Rodman Wanamaker, proprietor of the two papers, and supplies the association with a building admirably located and fitted for their show. Three floors of the building will be used, with about 72,000 square feet of space.

The show will be held during the week of Jan. 12-19, and is in charge of the following committee: Chairman, John H. Fassitt; Lee J. Eastman, Louis C. Block, A. E. Maltby and J. E. Gomery, secretary and treasurer. The committee's office is at Broad and Callowhill streets.

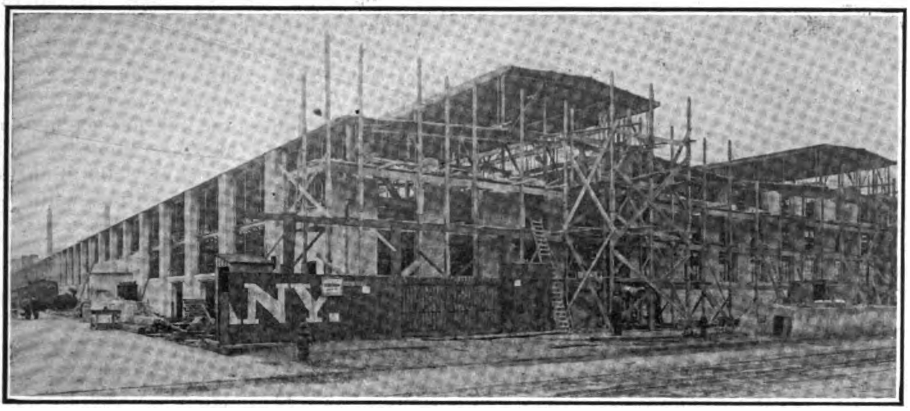
## DAYTON GETS HOUK LICENSE.

The Wire Wheel Corporation of America, Buffalo, N. Y., successor to the business of the Houk Manufacturing Co., has granted a license under its basic patents to the Dayton Wire Wheel Co. of Dayton, O., to manufacture wire wheels for motorcycles, aeroplanes and Ford automobiles. The Standard Roller Bearing Co. of Philadelphia and the Hayes Wheel Co. of Jackson, Mich., are also operating under licenses covering these patents.

# HAPPENINGS AMONG THE CAR AND PARTS MAKERS

## What Several of the Leading Manufacturers in the Motor Vehicle Industry and Allied Lines Are Doing or Have Under Consideration

**The Michigan Copper and Brass Rolling Mills**, Detroit, Mich., is erecting an addition to its plant that will complete a unit of 100x160 feet in floor space. The addition is of brick and steel construction and will be completed about Dec. 15. Upon the completion of the new addition the company expects to increase production to 1,000,000 pounds of thin brass and copper per month.



New Addition Will Give Michigan Copper and Brass Rolling Mills, Detroit, Mich., Production of 1,000,000 Pounds of Thin Brass and Copper Per Month.

**The International Motor Truck Corporation**, New York, has received an order from the United States government for trucks valued at more than $4,000,000. The contract 'calls for the delivery of 500 trucks by Jan. 1, 1918, and 200 a month each in January and February. The trucks are all of the new A-C Mack model, varying from 5½ to 7½ tons.

**The Wagner Axle Co.**, Indianapolis, Ind., has purchased the plant of the De Tamble Motors Co., Anderson, Ind. The company will manufacture a worm drive axle. A force of men is now employed in preparing the factory building. A. G. Wagner is president of the company.

**The La Crosse Tractor Co.**, La Crosse, Wis., will purchase new machinery and equipment to enable the company to increase its output from 75 to 100 per cent. An addition to the plant will be erected early in 1918.

**The Briscoe Motor Corporation**, Jackson, Mich., has increased its production from 25 cars per day to 50 per day.

**Cadillac, Mich.**; The Cadillac Auto Truck Co. has added a four-ton model to its line, which now includes one, two and 3½-ton models. The new truck will be styled model D. It has a Continental type E engine, with Rayfield carburetor and Stewart feed and Eisemann magneto. The wheelbase is 168 inches and the loading space 156 inches. Front tires are 36 by 5 single and rear 40 by 5 dual. The price of the chassis is $3700.

**The Gillette Rubber Co.**, Eau Claire, Wis., has commenced the erection of a new large light, heat and power plant. It will be 65 by 90 feet and ready for occupancy Feb. 1. It is now turning out from 300 to 350 tires and tubes a day.

**The Milwaukee Forge and Machine Co.**, 222, 226 Lake street, has started work on a complete new manufacturing group to be located at Oklahoma avenue and the northwestern tracks in the town of Lake, Milwaukee county. The new machine shop will be 65 by 100 feet and forge shop 75 by 140 feet and 50 feet high.

**The Page Woven Wire Fence Co.**, Pittsburgh, Pa., has changed its name to the Page Steel and Wire Co., and is opening an office at 644 Union Arcade, with E. C. Sattley as general manager. The general sales houses are at Monessen, Pa., and Adrian, Mich.

**The Titan Truck and Tractor Co.**, Milwaukee, Wis., recently organized to manufacture motor trucks with a capital stock of $100,000, is now actively engaged in working on its new plant at 843-849 30th street, and has changed its name to Titan Truck Co. Joseph C. Millman is general manager of the company.

**The Perfection Tire and Rubber Co.**, Ft. Madison, Ia., has started construction work on the second unit of its factory. The new unit will be 60 by 250 feet, three stories, and will be of steel and concrete construction. The new building will triple the facilities of the company.

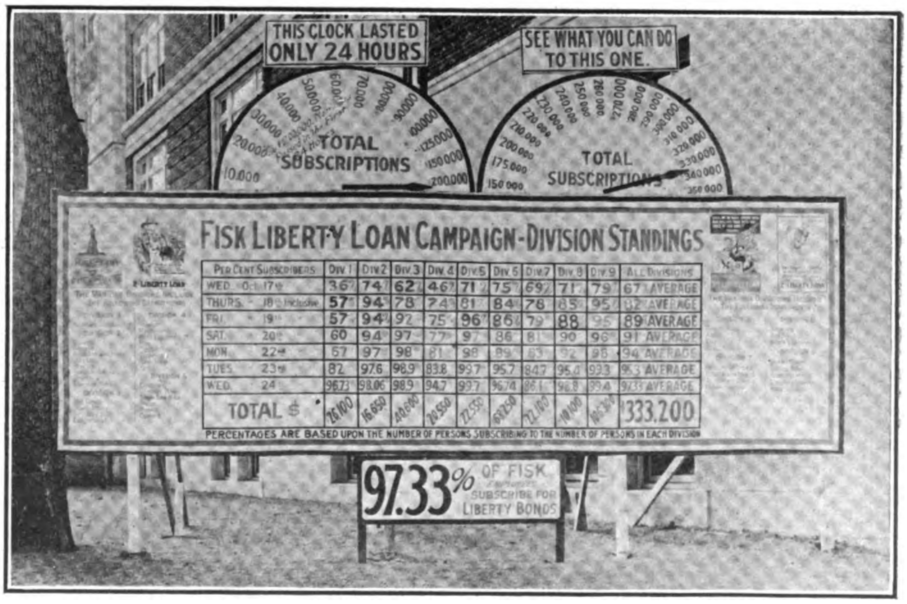
**The Franklin Automobile Co.**, Syracuse, N. Y., has increased its production from 285 to 294 cars per week, an average of 53 cars per day for the 5½ working days of the week.

**The International Harvester Co.**, Milwaukee, Wis., will erect new buildings costing more than $100,000. The plans call for a new forge shop, 75 by 147 feet, with a wing, 27 by 325 feet, and a crane way 70 by 180 feet.

**The Weidely Motors Co.**, Indianapolis, Ind., is completing a two-story brick addition to its factory buildings, which will add 30,000 square feet of floor space. Contracts booked for tractor motors made this addition necessary. The company is now employing a complete night force of workmen and several departments will be kept running overtime for several months to come.

**The Fisk Rubber Co.**, Chicopee Falls, Mass., report an exceedingly successful campaign for the second Liberty loan. Over 97 per cent. of the employees participated and they subscribed for $333,200.

**The Tillotson Manufacturing Co.**, Toledo, O., is manufacturing 2000 carburetors per day and is now in its new three-story building. This building covers approximately three acres of ground.



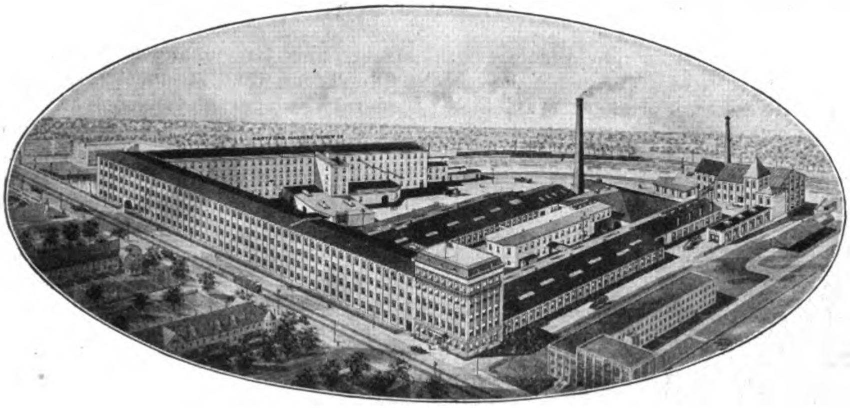
FISK LIBERTY LOAN CAMPAIGN-DIVISION STANDINGS

| PER CENT SUBSCRIBERS | DIV. 1 | DIV. 2 | DIV. 3 | DIV. 4 | DIV. 5 | DIV. 6 | DIV. 7 | DIV. 8 | DIV. 9 | ALL DIVISIONS |
|---|---|---|---|---|---|---|---|---|---|---|
| WED. Oct. 17th | 36 | 74 | 62 | 46 | 71 | 75 | 69 | 71 | 79 | 67 AVERAGE |
| THURS. 18th Inclusive | 57 | 94 | 78 | 74 | 81 | 84 | 78 | 85 | 95 | 82 AVERAGE |
| FRI. 19th | 57 | 94 | 92 | 75 | 96 | 86 | 79 | 88 | 95 | 89 AVERAGE |
| SAT. 20th | 60 | 94 | 97 | 77 | 97 | 86 | 81 | 90 | 96 | 91 AVERAGE |
| MON. 22nd | 67 | 97 | 98 | 81 | 98 | 89 | [illegible] | 92 | 98 | 94 AVERAGE |
| TUES. 23rd | 82 | 97.6 | 98.9 | 83.8 | 99.7 | 95.7 | 84.7 | 95.4 | 99.3 | 95.3 AVERAGE |
| WED. 24th | 96.73 | 98.06 | 98.9 | 94.7 | 99.7 | 96.74 | 86.1 | 96.8 | 99.4 | 97.33 AVERAGE |
| TOTAL $ | 26100 | 16650 | 40600 | 20550 | 22550 | 68250 | 22100 | 10100 | 106300 | 333.200 |

PERCENTAGES ARE BASED UPON THE NUMBER OF PERSONS SUBSCRIBING TO THE NUMBER OF PERSONS IN EACH DIVISION

Clocks and Bulletin Board Used by the Fisk Rubber Co., Chicopee Falls, Mass., Checking Up Second Liberty Loan Subscriptions.

**The Hartford Machine Screw Co.**, Hartford, Conn., has made large additions to its plant, which now comprises over 200,000 square feet of floor space. The company manufactures Master spark plugs and power driven tire pumps, as well as a long list of screw machine products.



Panoramic View of the Hartford Machine Screw Co., Hartford, Conn., Home of the Master Calorite Spark Plugs and Master Tire Pumps. With Recent Additions the Company Is Now Occupying More Than 200,000 Feet of Floor Space.

**Walker M. Levett Co.**, New York, N. Y., manufacturer of aluminum alloy pistons, has issued a booklet on the subject of Magnalite piston design, so arranged that it can be inserted in the S. A. E. hand book binder.

**The P. & B. Manufacturing Co.**, Milwaukee, Wis., has changed its name to the A. H. Peterson Manufacturing Co. The company will continue the manufacture of the P. & B. products.

**The Roth Cadillac Co.**, Erie, Pa., has succeeded to the automobile and accessory business of Jacob Roth and will continue the business under the same policy and management.

**Fuller & Sons Manufacturing Co.**, Kalamazoo, Mich., entertained their employees at their annual winter picnic. This is the third annual event and is participated in by employees and their families. The factory is practically completed and the new departments are using progressive manufacturing and assembling systems, which will greatly increase the output.

**The Erie Motor Car Co.**, Painesville, O., has completed the design of its one-ton truck and plans to start production at an early date. The truck is constructed throughout of standard units and incorporates a Continental engine, Fuller gear box and clutch, Torbensen rear and Columbia front axle and Lavine steering gear. It has 127-inch wheelbase and is mounted on solid tires 34 by 3 and 34 by 4 rear. Starting and lighting system is part of the regular equipment.

**The Diamond T Motor Car Co.**, Chicago, Ill., has moved into the new plant at 26th street and Kilburn avenue. Most modern methods of equipment for the manufacture of the Diamond T trucks have been installed.

**The General Motors Corporation** during the month of October reached a total of $3,325,000, an increase of $1,000,742, or 43 per cent. over October of last year. During the month it sold 19,169 cars and trucks.

**The Sevison Electric Co.**, Elkhart, Ind., has been reorganized as the Standard Ignition Co., with a capital stock of $200,000. The company is developing a high tension magneto.

**The Wagner Axle Co.**, Anderson, Ind., has announced to the industry that its latest product is the "Liberty Axle." The axle is worm driven and is being offered for 1918 requirements in 1½, 2, 3½ and 5-ton capacities.

**The Maxwell Motor Co., Inc.**, Detroit, Mich., has declared the regular quarterly dividend of 1¾ per cent., $1.75 per share, on preferred stock of the company. It is payable Jan. 2, 1918, to stockholders of record of Dec. 10, 1917.

**The Dodge Brothers**, Detroit, Mich., has put into effect a new price list. The touring car and roadster, formerly $835, now cost $885; the winter car, formerly listed at $1000, now costs $1050, and the sedan and coupe have gone up from $1265 to $1350. The new chassis price is $785.

**The Boice-Perrine Co.**, Boston, Mass., to meet the requirements of its increasing business, has been compelled to seek more commodious quarters at 48-50-52 Cummington street. The company handles U. S. storage batteries, Dreadnaught tires, Rayfield carburetors, Haynes wire wheels and the General Ford starter.

**The Pierce-Arrow Motor Car Co.**, Buffalo, N. Y., in its operations for the nine months ending Sept. 30, made a net profit of $3,796,129 after deducting interest and depreciation, $351,998, from its net operating profits. For the first months of the same period the similar net profit was $1,687,015 after deducting interest and depreciation from its operating profit of $1,809,729.

**The Chalmers Motor Co.**, Detroit, Mich., during the month of October reached a total of 1324 cars, as compared with that of 577 during the same month of last year. Chalmers manufacture is showing steady progress under the new hands.

**The Morgan Manufacturing Co., Inc.**, dealers in automobile parts and accessories, has moved from Newport, R. I., to Keene, N. H.

**C. F. Gilmour Co.**, Syracuse, N. Y., has been formed to distribute Dodge Brothers cars. H. R. Bliss is president of the company. The incorporators are C. M. Bishop, H. A. Bonnell, C. F. Gilmour, J. A. Cramer.

**The Fenton Foundry Co.**, Almont, Mich., is turning out hub caps for the Oldsmobile company at the rate of 400 a day to fill an order for 60,000.

**The Packard Motor Car Co.**, Detroit, Mich., received orders for over $1,000,000 worth of Twin Sixes on Oct. 30, establishing that day as a record breaker in the company's history. Sales for the six weeks ending on that date showed an increase of 30 per cent. over the corresponding period in 1916.

**Geuder, Paeschke & Frey Co.**, Milwaukee, Wis., have completed arrangements with the Maxim Silencer Co. of Hartford, Conn., to produce and market exclusively a full line of Maxim Silencers for trucks and passenger cars. This silencer has excellent muffling qualities, while it does not result in back pressure against the cylinders and will be produced at satisfactory prices.

**The Jordan Motor Car Co.**, Cleveland, O., reports that its shipments of cars for the week ending Nov. 3 were the largest in its history. During the month of October shipments from the factory were 27 per cent. over to holders of record Nov. 30.

**The Union Carbide and Corundum Corporation**, New York, N. Y., has been incorporated with a capital of $15,000,000. The company is the parent concern in the merger of the Prest-O-Lite Co., National Carbon Co., Union Carbide Co. and Linde Air Products Co. The incorporators are C. K. G. Billings, Myron T. Herrick and Charles A. Coffin.

**The Hackett Motor Car Co.**, Jackson, Mich., is planning to move its plant to Grand Rapids in the spring and will soon announce two new models.

**The United States Auto Gear Shift Co.** has been organized at Portland, Me., with an authorized capital of $1,500,000. C. G. Trott is president of the company and P. B. Drew treasurer.

**The Youngstown Pressed Steel Co.** has been organized at Youngstown, O., with an authorized capital of $1,000,000. The new company has acquired the fabricating departments of the Sharon Steel Hoop Co. and its subsidiary, the Youngstown Iron and Steel Co. W. W. Galbreath is president of the company.

**The Shotwell Pump and Tank Co.**, Indianapolis, Ind., has increased its capital to $100,000. The capital stock was formerly $60,000.

**The Prest-O-Lite Co., Inc.**, Indianapolis, Ind., has appointed the following acetylene distributors: H. H. O'Neil, 236 E. Main St., New Britain, Conn.; Nystrom Garage, Bristol, Conn.; Stanford Storage Battery Co., 42 Main St., Stanford, Conn.; Heple Stevens Co., Modesto, Cal.; Heyer Auto Supply Co., 34 Valley road, Montclair, N. Y.; Kentucky Tire and Rubber Works, 917 E. Broadway, Louisville, Ky.; H. E. Luther, Centerville, Ia.; The Texas Auto Supply Co., 7th and Commerce Sts., Ft. Worth, Tex.; Dewey Hardware Co., 160 Park St., Kenosha, Wis.; Prest-O-Lite Battery Shop, 57 Imlay St., Hartford, Conn.; A. Gans, 43 Temple St., New Haven, Conn.; Charles A. Templeton, Inc., 13-15 E. Main St., Waterbury, Conn.; National Electric and Supply Co., 1328 New York Ave., N. W., Washington, D. C.; Florida Auto and Supply Co., 315-317 13th St., Miami, Fla.; Cook Automobile Co., Orlando, Fla.; G. Norman Baughman, 610-620 Tampa St., Tampa, Fla.; Athens Tire Co., Perry and Drayton Sts., Savannah, Ga.; Athens Engineering Co., 237 College Ave., Athens, Ga.; Harris Tire Co., Perry and Drayton Sts., Savannah, Ga.; A. A. Parish, 116-118 Central St., Valdosta, Ga.; Boise Auto Supply and Sporting Goods Co., 902 Idaho St., Boise, Ida.; Dowd's Garage and Supply Co., Lewiston, Ida.; Automobile Accessories Co., 214 S. Main St., Pocatello, Ida. Battery service representatives: Petty Bros. Motor Co., 113-115 Centre Ave., Brownwood, Texas; Council Bluffs Battery Co., 39 Fourth St., Council Bluffs, Ia.; Central Garage, Oakdale, Cal.; Sickler Motor Sales Co., Main St., Forsyth, Mont.; General Auto Repairing Co., Fort Morgan, Col.; Sears & Sears, Walsenburg, Col.; Lee & Miner, Cascade and N. First Sts., Montrose, Col.; Lincoln Highway Garage, 310 Sandusky St., Bucyrus, O.

**The Kissel Motor Car Co.,** Hartford, Wis., has appointed the following new dealers and agents to distribute Kissel passenger cars and trucks: H. Lawrence, Boulder, Col.; George H. Moreau, Riverton, Wy.; J. F. Vanderwark, Ft. Collins, Col.; Harry J. Jackson, Broomfield, Col.; Snohomish Auto Co., Snohomish, Wash.; L. H. Franklin, Mansfield, Ga.; G. A. Meyers, Jeannette, Pa.; McClain & Kesselring, Johnstown, Pa.; H. C. Baalam, Exeter, Cal.

**The McFarlan Motor Sales Co.** has taken the agency for McFarlan cars in Rhode Island and opened a sales and service rooms at 153 Broad St., Providence. Harry Whitehead, formerly the Speedwell agent in that territory, is managing the business.

**The United States Switch Co.,** Eau Claire, Wis., recently incorporated with a capital stock of $1,750,000, is now operating its new plant and is preparing to build a new forge shop 60 by 130 feet. T. C. Hadley is vice president and general manager.

**The H. B. Shontz Co., Inc.,** 157 West 54th street, New York, has been appointed distributor and will act as central service station for the U-S-L storage batteries in the metropolitan district. H. B. Shontz is president and general manager of the company.

**The Motor Accessories Corporation** will open branches within the next six months in the states of Nebraska, Colorado, California, Ohio, Kansas, Idaho, Arizona, Utah and Montana. Separate branch managers will be in charge of each state.

**Chadick-Delamater Corporation** has been appointed as representative of the Sheldon Axle and Spring Co. for the distribution of parts in New York City and vicinity. The company's service station is at 159 West 24th street, New York City, and is well equipped to take care of repairs. A complete stock of parts will be carried for the purpose of cooperating with dealers and truck users, enabling them to make replacements on short notice.

**The Willys-Overland Co.** is rapidly developing manufacturing equipment to produce the new model four, which will sell at a price it is understood in direct competition with the Ford. Show models of the new car have been produced and Overland dealers from all over the country recently visited the factory and rode in it. Production will commence in the late spring.

**The Hoover Steel Ball Co.,** Ann Arbor, Mich., did a total business of over $2,700,000 in the past fiscal year. The company's war tax was about $300,000. L. J. Hoover was re-elected president and general manager; F. A. Stivers, vice president, and M. J. Fritz, treasurer.

**The Portage Rubber Co.,** Barberton, O., will increase its capital to provide for expansion and future growth of the business. A special meeting of the stockholders has been called for Nov. 20, at which a vote will be taken on a proposition to increase the authorized capital to $10,000,000, half common and half preferred.

**The Olympian Motors Co.** has purchased the manufacturing equipment of the Meridian Manufacturing Co., Indianapolis, Ind., which company made the bodies for Olympian cars. Franklin T. Chapman, a body engineer, has been engaged and the Olympian motors will hereafter build its own bodies at its own plant.

**The Dorris Motor Car Co.,** St. Louis, Mo., has increased its capital from $330,000 to $1,000,000. W. L. Colcord of the Colcord Wright Machine Co. of St. Louis has been elected president of the company to succeed H. B. Krenning, who has retired. C. P. Dorris continues as vice president and engineer of the company.

**The U. S. Light and Heat Corporation** held its annual conference of service station representatives at the factory at Niagara Falls, Oct. 23-25. Papers covering every angle of the battery service station business were read and discussed. The meetings were presided over by J. A. White, sales manager of the battery division. H. A. Harvey, general service manager, and President J. Allan Smith spoke and congratulated the men on the big increase in the service station business during the past year.

**The Ford Motor Co.** of Canada during the current fiscal year plans to increase its output, the production schedule calling for 10,000 trucks and 60,000 passenger cars.

**The Columbia Motor Truck and Trailer Co.,** Pontiac, Mich., has received a $975,000 contract for two-ton Columbia trucks for export. Deliveries are to be made over a period of three years.

**The Jones Motor Car Co.,** Wichita, Kan., has increased its capitalization from $500.000 to $2,500,000. It will engage in the construction of limousine, coupe and all kinds of inclosed bodies and tops, as well as fenders, upholstering and bodies for trucks and commercial cars.

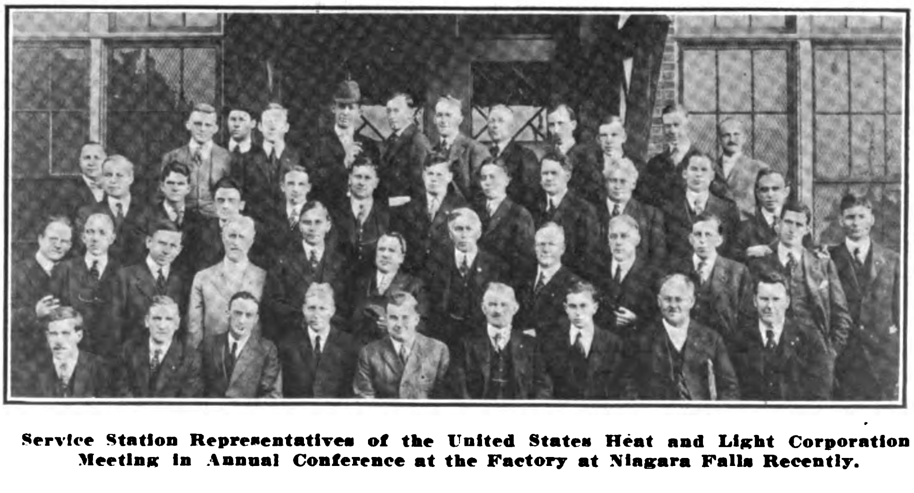
**The Holt Manufacturing Co.,** Peoria, Ill., maker of the Holt caterpillar tractors, is making new extensions to the plant, which is a training camp in which quarters for 100 officers and 500 men will be provided and repair of tractors used by the army abroad. The plant is to be doubled. The company has acquired 35 acres adjoining its plant and will increase its force to 3000 workers.

**The Fruehauf Trailer Co.,** Detroit, Mich., has increased its capital from $75,000 to $100,000, and is considering a new factory. August C. Fruehauf is general manager; H. C. Fruehauf, assistant; H. E. Brown, sales manager, and E. L. Vosler, auditor.

**The Mat Co.,** Muskegon, Mich., has been incorporated for $10,000 and will manufacture cocoa fiber products, including running board and tonneau mats. W. E. Bassett is president; Walter Krebs, vice president; Oscar Berg, secretary and treasurer.

**The Russel Motor Axle Co.** has completed its addition to the plant. It now has a floor space of 26,000 square feet and has new machinery costing $50,000. The company plans to increase the output nearly 60 per cent. during the coming year. The capital has been increased recently.

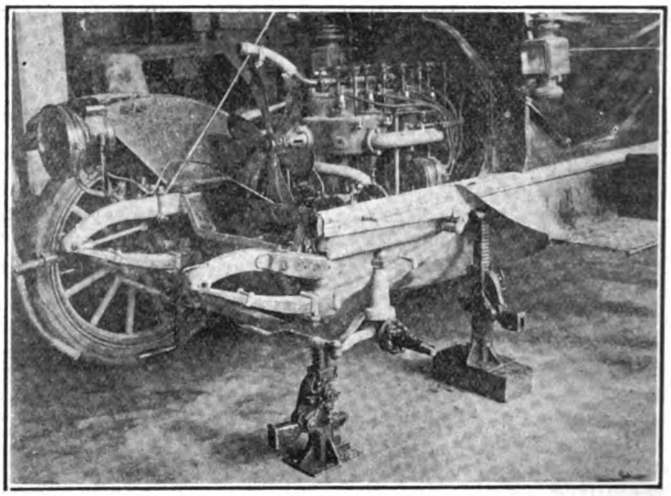
**The Guaranty Securities Corporation** occupied their new banking offices at Madison avenue and 38th street, New York, Nov. 17. This corporation, formerly in the Equitable building, has taken up larger quarters at their new address, 244 Madison avenue.



**Service Station Representatives of the United States Heat and Light Corporation Meeting in Annual Conference at the Factory at Niagara Falls Recently.**

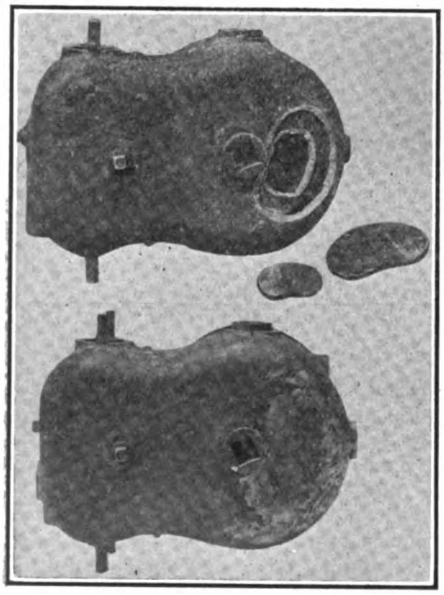
# *Miracles of the Modern Salvaging Tool*

## Methods of Conserving Products and Restoring Usefulness of Wrecked Machinery



**Broken Frame Member Being Prepared for Welding While on the Car. Courtesy of Prest-O-Lite.**

THE world has never before faced such a scarcity of materials as it does today. One evidence of this condition is that practically all the output of the entire iron and steel industries is contracted for months in advance. This alone is sufficient warning to the automobile industry to make careful use of the resources now on hand. There cannot be a continuance of extravagant, wasteful methods. The useless scrapping of defective parts simply to keep the small imperfections out of the finished product cannot go on. Fortunately considerable attention is now being given to salvaging processes and among the instruments which will help greatly in solving the big problem of conservation is the oxy-acetylene welding torch.



**Valuable Cylinder Casting Before and After Welding; Water Jacket Cut Away to Permit the Welding of the Cylinder.**

The touch of the oxy-acetylene torch makes whole the broken parts of machinery. Not only does it mend the break, but in many cases it makes the piece stronger than ever before.

No industry benefits more by this useful process of salvaging tools and materials than the automobile industry. Here from the rough casting to the finished product the uses for the torch are multitudinous. Practically any of the metals commonly used, with the exception of galvanized iron, can be welded by means of the torch.

It is a surprising fact that those metals most commonly used are easiest welded. Cast iron, the most generally used of all metals in the automobile, is the easiest to weld, and when welded properly the results are extremely satisfying. As the carbon content increases, iron changes to steel and the welding becomes more difficult. Aluminum is not being used as extensively in the automobile as formerly, and presents difficulties in welding that requires experience to surmount.

### The Story of the Cylinder Block.

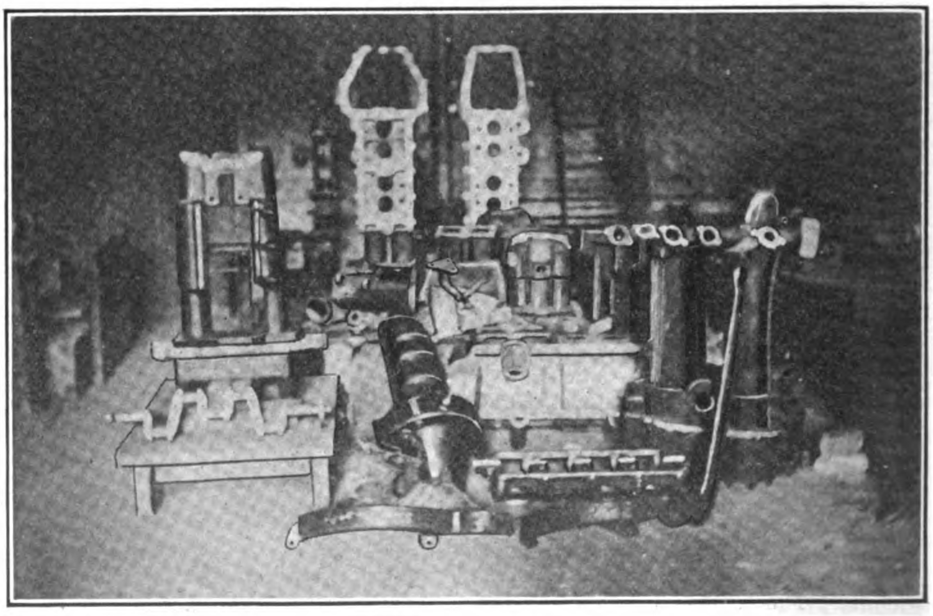
To illustrate a few cases where the welding torch proves its value as an instrument of salvage, take the history of a cylinder block, from the time when it leaves the foundry to the time it is installed in the automobile it is a valuable product, and its junk value is far below its actual cost, which is represented in time more than material.

With the intricate water jackets, the valve pockets and intake and exhaust passages, a cylinder casting is an involved form. If cast properly the cores must be correctly placed, and even then the explosion of the flask in which the cylinder is cast is a common occurrence. It is not to be wondered then, that many of the cylinders come from the foundry in a more or less imperfect state.

Blow holes in the metal, thin water jackets, or other imperfections are bound to occur, and a few years ago these imperfect castings would have been thrown back into the furnaces to be melted over again and recast. Labor loss upon such a casting would be considerable, compared with its total value.

Today, however, this extravagant waste of labor, simply to secure a perfect casting, is entirely unnecessary. With the welding torch the holes may be filled, metal restored and even parts built up on the casting so that only an experienced eye could detect a repair made in this manner.

As the work progresses upon the raw casting, as the cylinders are bored, the valve pockets faced and the surfaces milled, small blow holes, which may have been hidden beneath the surface of the rough casting, may be brought to light. Under ordinary conditions, if these holes appear at unimportant points, they may be left unfilled. Several years ago a blow hole in a cylinder wall, brought to light at the final grinding, rendered the casting useless, and it was scrapped. The hours of work on the casting and the costs of machining



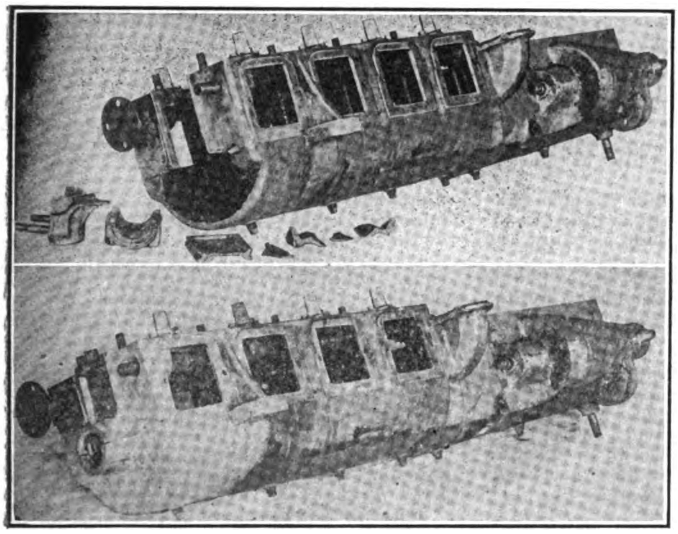
**A Few Automobile Parts Which Were Salvaged by the Capitol Welding Company of Providence, R. I.**

were utterly lost and were charged against expense.

With the oxy-acetylene torch, however, blow holes of this kind are quickly filled, the surface refinished with but a slight additional amount of labor, the casting salvaged from the junk heap and sent on to the automobile to function as well as a cylinder that went through the factory with absolutely no fault.

This lesson of the cylinder block is just as adaptable to any of the iron castings on the machine. As they progress from the raw stock to the finished product small imperfections and breaks may be repaired at a surprisingly low cost, making possible the reduction in cost of the finished machine. The manufacturer owes much to the welding torch, for with it he can salvage many castings that otherwise would represent direct loss.

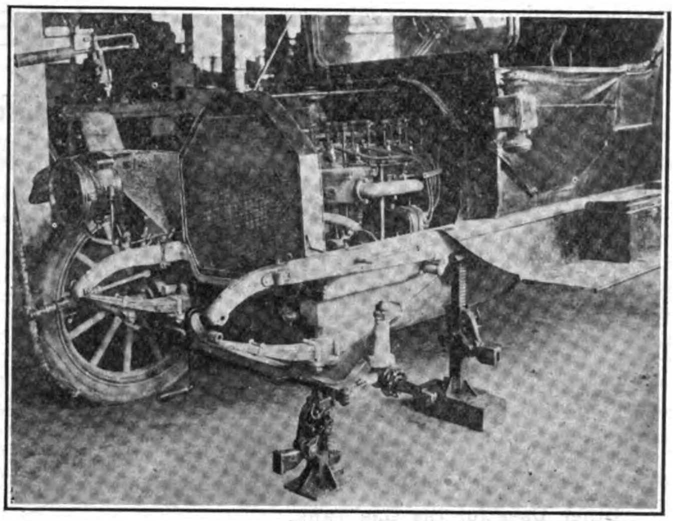
When an engine is complete its total valuation as represented by the weight of metal contained in it, may be but a few dollars; while as an actual fact its actual value as a machine is in the hundreds of dollars. This difference in valuation is represented by labor, which goes to show that the salvaging of broken parts is of extreme importance.


**Badly Broken Aluminum Crank Case Before and After Salvaging with the Oxy-Acetylene Torch.**

When, through accident, the cylinder, water jacket, crank case or supporting lugs are broken, if it were not for the welding torch the casting would immediately become junk and its value reduced from dollars to cents. With the torch and the outlay of but little money for gas and welding material, the casting may be restored to its original condition.

Many manufacturers have adopted the welding method of joining two housings in preference to using rivets. If correctly designed welding in many cases gives better results and may be accomplished more quickly than the riveting operation. Where housings are riveted and their proper functioning destroyed because of the shearing or loosening of the rivets, welding is the logical repair. This is particularly true of rear axle casings where the brake or wheel drums and the differential housings are fastened to the shaft housings.

Frame members damaged by shocks, overloads, etc., can be repaired in many instances while on the car, thus saving considerable time and eliminating the loss caused by the tieup of the machine, which would result were the part to be replaced.

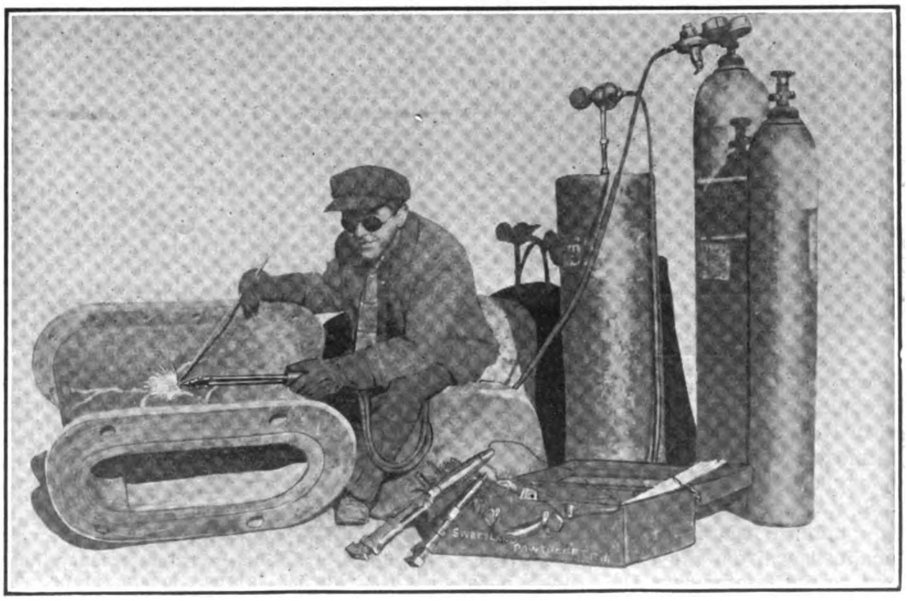

**The Broken Frame Member Shown on the Opposite Page Is Here Shown Restored. Courtesy of Prest-O-Lite.**

Though it is possible to weld the higher carbon steels, such as crankshafts and transmission shafts, repairs so made are not to be relied upon in every case. The metal replaced and at the point of repair cannot be treated the same as the rest of the shaft, which is usually drop forged. The manufacturer, however, sometimes finds that money can be saved upon pieces of this sort of welding. An instance is recalled where a six-throw crankshaft, which in the final turning operation, had a piece gauged from the journal by the slipping of the lathe tool. For a number of reasons it would have been inadvisable to have finished the crankshaft, leaving the deep scratch, and had it not been for the welding torch the valuable shaft would have been lost. As it was a slight amount of metal was added, filling the scratch, and the journal was put through the usual finishing operations. For all practical purposes the crankshaft was as good as new.

### Repair Shop Reclamations.

There is a big field open to the repair man who is willing to install a welding outfit in his shop. Castings that represent many dollars may be reclaimed with an outlay of a few cents, leaving a liberal margin of profit. In many cities the welding and repairing of automobile and engine cylinders alone is sufficient to keep one man busy most of the time. The knowledge required to master the art of welding cast iron can be obtained very easily, and but little practise is necessary before one may be able to weld all ordinary breaks. As the welding of cast iron is mastered the welding of the higher carbon steels may be attempted.

Even if the cost of welding amounted to the price of a new casting the automobile owner is often willing to pay the price because of the time saved by the process. New parts cannot always be


**Portable Oxy-Acetylene Outfit, Showing Gas Tanks Set Up and Operator Applying the Torch to a Break.**

obtained at short notice, while even the most difficult welding operation can usually be finished in two or three days.

As an all around utility tool the torch is of value to every repair man. If he maintains a machine shop in connection with the repair department, the oxy-acetylene torch solves one of his big problems, mainly the item of lathe tools. It has been successfully demonstrated that high speed steel for lathe tools enables the user to increase production and speed. The supply of high speed steel, however, is very limited, and its cost at the present time is almost prohibitive. With the welding torch small pieces of this steel may be welded to larger pieces of iron for the lathe tools and used until the steel has been entirely worn away.

### Other Uses for the Gas Tank.

The money put into the welding apparatus does not necessarily mean that this apparatus can be used only for welding. For such a small investment the uses to which the outfit may be put are many. A soldering outfit may be used in conjunction with the acetylene tank, with which radiators may be soldered, as well as used for general all around soldering.

Another field open to the welding outfit owner is the carbon burning operation. For this the oxygen from the welding outfit is used with a specially made torch, having a flexible nozzle for insertion in the engine cylinders.

It is safe to say that there are few machines or devices that can be used more effectively or form a better source of income even in the smallest repair shop than the "putting on" tool of today, the modern oxy-acetylene welding torch.

## "SELLING POINTS OF HUNDRED POINTERS."

E. D. Gibbs of E. D. Gibbs Co., Inc., publishers, at 461 Eighth Ave., New York City, has published a book entitled "Selling Points of Hundred Pointers." It is an invaluable work for salesmen, as it contains a collection of practical talks and arguments dealing with the education of salesmen and the sale of merchandise obtained from personal interviews with sales and business executives, talks made at conventions and articles in house organs, bulletins and sales manuals. The book has board covers and sells for $2 a copy, postage paid.

## SCANDINAVIA HARD UP FOR CARS.

Sverre Edin of Kolberg, Caspary & Co., engineers, Kristiania, Packard dealers in Norway, who came to America on the most recent voyage of the only ship plying between the ports of New York, U. S. A., and Kristiania, Norway, arriving a month ago, is endeavoring to obtain licenses from the American government so that motor cars and trucks, both of which are in great demand in his country, may be shipped.

# TRADE INFORMATION EXCHANGE

## A National Clearing House of the Trade's Needs for Manufacturers, Jobbers and Agents

### GASOLINE PLEASURE CARS.

**Sacramento, Cal.;** Rice & Forrest is now in the market for the agency of gasoline cars; selling price $750 to $1200.

### GASOLINE COMMERCIAL CARS.

**Sacramento, Cal.;** Rice & Forrest is interested in commercial vehicles; selling price $900 to $5000.

**Port Arthur, Tex.;** Port Arthur Auto Sales Co., is in the market for gasoline commercial trucks; selling price, $750 and up.

### MOTORCYCLE AGENCIES.

**Kittanning, Pa.;** Frank T. Fries is interested in motorcycles selling at any price.

### SPECIAL OPPORTUNITY.

**Brockton, Mass.;** Jos. A. Normandin, care Brockton Motor Co., 3 Clinton avenue, is in the market for a list of trucks and tractors utilizing the four wheel drive principle; also a line of trailers manufactured.

**Minneapolis, Minn.;** Sturr-Bullard Motor Co.; 1318-1320 Nicollet avenue, is interested in special bodies for pleasure and commercial Ford cars.

**Kittanning, Pa.;** Frank T. Fries would consider the agency for Henderson motorcycles in the territory of Armstrong county.

**Port Arthur, Tex.;** Port Arthur Auto Sales Co. would consider the agency for ½ to ¾-ton trucks in the territory of Texas and West Louisiana.

**Waco, Tex.;** McCauley-Ward Motor Supply Co. is in the market for everything pertaining to the jobber in automobile supplies.

### ACCESSORIES, EQUIPMENT AND SUPPLIES.

**Sacramento, Cal.;** Rice & Forrest is anxious to secure bumpers, dimmers, fire extinguishers, jacks, greases, oils, pans, shock absorbers, tire accessories, tires and special bodies for commercial cars. The products are to be used for resale.

**Gainesville, Ga.;** Louis E. Wisdom is in the market for air compressors, air pumps, anvils, arbor presses, autogenous welding equipment, bodies, bulbs, celluloid, chains, cylinder machines, dynamometers, gaskets, gasoline gauges, generators, hammers, hoists, holders, hose, hubs, jacks, lamps, locks, plugs, printed matter, pullers, pulleys, pumps, punches, racks, radiators, reamers, scrapers, screws, searchlights, seats, shims, shock absorbers, soaps, spokes, springs, stampings, starters, steering wheels, switches, tanks, tape, testers, timers, tire accessories, tires, tools, tops and parts, trimmings, upholstery, varnishes, vises, wheels, wrenches and Ford bodies for pleasure and commercial cars.

**Ayden, N. C.;** Eure Motor Co. would like to secure air pumps, bumpers, cabinets, greases, oils, platinum, polishes, printed matter, searchlights, tanks, testers, tires, varnishers, vulcanizers, waste, wrenches. The products are to be used for garage equipment.

**Kittanning, Pa.;** Frank T. Fries wants information regarding dimmers, drills, emblems, gasoline, goggles, greases, headlights, horns, lamps, locks, maps, oils, patches, plugs, recording time clocks, soaps, speedometers, strainers, tanks, tape, tire accessories, tires, tools, vises, waste, wearing apparel, whistles, wire, wrenches and special bodies for commercial cars. The products are to be used for motorcycle garage trade.

**Hillsboro, Tex.;** Grimes Garage and Machine Shop, 108 N. Waco street, wants air compressors, air pumps, asbestos, autogenous welding equipment, axles, batteries, bearings, belts, bodies, bolts, brushes, bulbs, bumpers, burners, cabinets, cable, camshafts, cans, carburetors, castings, celluloid, cements, chains, chemical tanks, clips, clutches, coils, commutators, cones, connectors, controllers, couplings, cranes, cups, curtains, cutters, cushions, cylinder machines, cylinders, dimmers, discs, drills, drums, dynamometers, dynamos, engines, fans, fenders, fire extinguishers, forgings, gaskets, gasoline gauges, gear cutting machines, gears, generators, glass, graphite, grinders, guards, guns, hammers, headlights, hoists, horns, hose, hubs, hydrometers, ignition indicators, jacks, jigs, joints, knuckles, lamps, lathes, levers, locks, lubricators, machinery, magnetos, mechanical starters, metal parts, meters, measuring instruments, molds and cores, motor controllers, motors, mufflers, nuts, odometers, packing, paints, pans, patches, pedals, pinions, pins, pistons, platinum, plugs, polishes, pullers, pulleys, pumps, punches, races, racks, radiators, ratchet drills, reamers, reflectors, regulators, removers (carbon), rests, rheostats, rims, rods, rubber, scrapers, screws, searchlights, seats, shafting, shapers, shims, shock absorbers, soaps, sockets, solder, speedometers, springs, stampings, starters, steel, steering wheels, storage systems, strainers, switchboards, switches, tanks, taps, terminals, testers, timers, tire accessories, transmission, tubing. turntables, upholstery, valves, ventilators, voltmeters, vulcanizers, washers, waste, wearing apparel, whistles, windshields, wire, wrenches.

**Bellows Falls, Vt.;** F. J. De Forge is interested in asbestos, autogenous welding equipment, batteries, bodies, bolts, brushes, cabinets, carbide, carburetors, cements, chains, charging apparatus, chemical tanks, clutches, coils, cups, cylinder machines, dashes, dimmers, drills, fenders, gaskets, gasoline, gauges, goggles, graphite, grinders, guards, headlights, hoists, horns, hose, hydrometers, ignition, indicators, jacks, lamps, lathes, leather, locks, lubricators, machinery, magnetos, metal parts, motor controllers, mufflers, nuts, pans, patches, pedals, pinions, pins, pistons, platinum, plugs, polishes, primers, printed matter, pumps, racks, radiators, ratchet drills, reamers, rectifiers, reflectors, removers (carbon), rims, rods, rubber, scrapers, screws, searchlights, seats, shims, shock absorbers, soaps, solder, speedometers, spokes, springs, starters, steel, steering wheels, storage systems, switchboards, switches, tanks, tape, terminals, testers, timers, tire accessories, tires, tools, tops and parts, transmission, trimmings, tubing, valves, vises, voltmeters, vulcanizers, washers, washstands, waste, wearing apparel, wheels, windshields, wrenches and special bodies for pleasure and commercial cars.

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The Aircraft Production Board of which Howard E. Coffin is chairman, is no longer connected with the Council of National Defense, but will work in conjunction with the Signal Corps. Gen. George O. Squire, Admiral W. D. Taylor and a fourth man not appointed as yet will constitute the board.

# Activities of Prominent Men of the Industry

## Resignations, Promotions and Other News of the Personnel of Motor Vehicle Manufacturing and Merchandising Companies and Allied Businesses

**Otis C. Friend** resigned the presidency of the Mitchell Motors Co., Racine, Wis., the middle of November, withholding for the time being announcement of a new connection which it is understood he had previously made. The new president of the Mitchell company is D. C. Durland, for 23 years associated in the active management of the General Electric Co., or companies acquired by the General Electric Co. R. C. Rueschaw, who recently resigned as a director in and sales manager of the Reo company, with which he had been associated since 1904, has been elected vice president of the Mitchell company.

**Otis C. Friend, Who Has Just Announced His Resignation as President of the Mitchell Motors Co., Racine, Wis.**

**W. H. Taneyhill**, who resigned as general sales manager of the Scripps-Booth Corporation, has become sales manager of the Detroit Weatherproof Body Co. He has had considerable merchandising experience, having been active in Studebaker and Dodge Brothers sales.

**Henry E. Bodman** has taken the position on the board of directors of the Packard Motor Car Co. left vacant by Henry B. Joy, who has resigned because of government service.

**D. L. Watson** is manager of the new Haynes factory service branch, Detroit, having resigned as assistant general manager of the Haynes Automobile Co. at Kokomo.

**Paul Hinkley**, formerly in charge of service for the Harold J. Arnold Co., Los Angeles, Cal., Hudson and Dodge Brothers distributors, is now service manager of the Bemb Robinson Co., Detroit.

**J. P. Hunting** is general traveling representative of the General Asbestos and Rubber Co. of Charleston, S. C. S. C. Harris Pickett, formerly of the Macavoy agency, is advertising manager of the General Asbestos Co. and will take up his duties at Charleston.

**W. Ashley Gray** has been appointed assistant manager and P. A. Anderson manager of the carriage sales for the Packard Missouri Motor Co., St. Louis.

**W. S. Jewell** has purchased an interest in the Quaker City agency in Philadelphia. He was formerly a salesman in New York for the Studebaker branch.

**W. J. Carter** has become branch manager for the Charles W. Tway Co., Dallas, and will look after the Haynes and Hollier business for that state. His headquarters are 707 Busch building, Dallas. He was for a number of years southern manager of the Hupp Motor Car Co.

**R. B. Cole** has been promoted to the position of general sales manager of the Hudson Motor Car Co. He has been associated with the company for four years and has been manager of the Hudson branch in Brooklyn. He succeeds Ezra C. Bull, who has resigned to accept the presidency of the Super Lighting Co., which manufactures the Controllite lens.

**C. C. Miniger** has been appointed a vice president of the Willys-Overland Co. He was formerly president of the Auto Lite Co. Mr. Miniger will devote his time assisting Mr. Willys in the general management of the Overland business. The Elmira plant of Overland is working night and day on airplane work and is employing 4000 men.

**Walter E. Holland** has joined the staff of the Philadelphia Storage Battery Co., Philadelphia, Pa., makers of Philadelphia Diamond Grid batteries, and he has been placed in charge of the research work connected with the manufacture of batteries for use in electrical passenger and commercial cars, and starting, lighting and ignition system on gasoline cars. Mr. Holland was formerly chief electrical engineer of the Edison Storage Battery Co., Orange, N. J., and was connected with the Edison interest for 10 years. After resigning from the Edison company and before making his present connections he was research engineer of the Anderson Electric Car Co., Detroit, and Pacific coast representative of the Walker Vehicle Co., Chicago, and of the Elwell-Parker Electric Co., Cleveland, O.

**L. M. Baker** is sales manager of the United Motors Service, Inc., Detroit. He was formerly sales representative of the Standard Steel Spring Co., Coraopolis, Pa.

**Philip W. Sumner** is in charge of the sales production department of the United States Motor Truck Co. He was formerly with the Stewart Iron Works.

**W. S. Schultz** has accepted a position as retail sales manager with the Overland Davenport Co., Davenport, Ia. He was formerly factory representative of the Willys-Overland Co. in the middle west.

**F. H. Ahrens** is now with the Sherrouse-Steele Motor Car Co. as manager of the used car department. He was recently with the Fairchild Motor Car Co., New Orleans.

**W. G. Becker** is now connected with the Fred Campbell Auto Supply Co., St. Louis. His headquarters will be at Memphis, Tenn. For the past three years he has called on automobile dealers representing the Electric Appliance Co.

**Leo H. Levy** has enlisted in the aviation corps of the United States Army. He was formerly with the sales force of the Sherrouse-Steele Motor Co.

**H. H. Hay** is now sales manager of the passenger car department of the Baltimore Packard Co. He was for a time district representative for D. E. trucks.

**R. H. Daniels** has been appointed export manager of the Goodyear Tire and Rubber Co., Akron, O., to succeed J. C. Macfedyean, who has resigned to enter business for himself. Mr. Daniels started with the Goodyear company seven years ago as a salesman. A little over a year ago he was made assistant manager of the export department, and since that time has traveled extensively, visiting the far eastern ports and centres of business to observe trade conditions. On his trip he went to Hawaii, the Philippines, India, Ceylon, Sumatra, Malay Peninsula, China and Japan.

**R. H. Daniels, Manager Export Department the Goodyear Tire and Rubber Co.**

**Herman Loeffler**, for the past three years with the Novo Engine Co., Lansing, Mich., has been appointed eastern representative for the Duplex Truck Co. He was for 10 years with the Fairbanks-Morse Co.

**H. R. McNaughton** has joined the advertising forces of the Champion Spark Plug Co., Toledo, O. Mr. McNaughton will serve as assistant advertising manager, aiding H. L. Corey. For the past four years he was sporting editor for the Toledo Times.

**Walter S. Cranmer** has been appointed assistant manager of sales by the Philadelphia Storage Battery Co. He is experienced in the electric vehicle line, having been connected with the sales of the Waverly and Wood electrics.

**Al Poole** is now with the factory sales force of the Wire Wheel Corporation of America, Buffalo, N. Y. He was prominent in the early automobile races and has sold magnetos for a number of years.

**Alan Jamison** has been appointed special representative of the Burd High Compression Ring Co. of Rockford, Ill., with headquarters at Baltimore, Md. F. C. Batchelder, formerly with the White company of Cleveland, O., has been appointed a factory representative of the company.

**T. J. Mailes** is now associated with the sales department of the Kizer-Reynolds Motor Co., where he will sell Chandler and Chevrolet cars and International and Corliss trucks.

**Charles A. Woodruff**, formerly connected with the Chalmers company, has been appointed general manager of the Saxon Motor Car Corporation, Detroit, Mich.

**R. D. Northrop**, formerly sales and advertising manager of the Standard Woven Fabric Co., Walpole, Mass., manufacturer of Multibestos brake lining, has become identified with the Spafford Advertising Agency, Boston, Mass.

**Walter C. Voss**, in charge of the Detroit office of the rim and tube division for the Standard Parts Co., has been transferred to Washington, D. C., to care for the company's many interests at the capital. Art A. Loeffler, formerly of the Jackson, Church-Wilcox Co., Saginaw, Mich., is now in charge of the Detroit office.

**A. A. Dailey** has been appointed in charge of sales and advertising departments of the Tuthill Spring Co., Chicago, Ill. He will act as assistant to D. S. Campbell.

**Louis M. Baker** is now sales manager of the United Motor Service, Inc. The company was organized to be official service representatives for Delco, Remy and Klaxon systems. Mr. Baker has been in Detroit as western representative for the Standard Steel Spring Co., Coraopolis, Pa.

**Charles M. Steele**, who has been director of advertising and sales promotion for the Saxon Motor Car Corporation, Detroit, is planning to go over seas and engage in Y. M. C. A. work among the allied troops.

**A. Frost**, who has been assistant manager, has been appointed manager of the New York City branch of the Chalmers Motor Co., Detroit, Mich. Charles H. King has resigned as manager.

**W. G. Jarman**, formerly treasurer and manager of the Canada Briscoe Motor Corporation, Ltd., has been appointed sales manager of the Jackson Automobile Co., Jackson, Mich. For 10 years he has been in the industry, first with the Maxwell Briscoe at Tarrytown, N. Y. He was later put in charge of the car distribution of the United States Motor Co., Inc. When the Briscoe Motor Corporation was formed Mr. Jarman became assistant sales manager and later went with the Canadian branch of the company.

W. G. Jarman, Sales Manager of the Jackson Automobile Co., Jackson, Mich.

**A. J. Banta** has been appointed assistant sales director of the Maxwell-Chalmers sales program. He was formerly vice president and production manager of the Premier Motor Corporation.

**Clifford M. Snow** has been made district manager in charge of Selden affairs in a group of states in the Southeast. His headquarters will be at Birmingham, Ala., and he will keep in close touch with the Selden dealers in Florida, Georgia, Alabama, Louisiana, Mississippi and Tennessee.

**George W. Wesley** has severed his connection with the General Vehicle Co. of Long Island City, maker of G. V. electrics. He was for a number of years vice president in charge of engineering and production.

**Charles Kirschenbaum** has joined the retail sales forces of Bull & Young, Syracuse, distributors of Franklin cars. He recently resigned from the sales department of the Franklin Automobile Co.

**W. F. Kneip** was re-elected president of the Baltimore Automobile Dealers' Association, Baltimore, Md.

**J. L. Justice** has been made supervisor for the Dallas zone by the Maxwell Motor Sales Corporation, with headquarters at Dallas. His territory comprises Texas, Louisiana, Arkansas, Oklahoma and New Mexico.

**William B. Tepoorten**, formerly with the engineering department of Holley Brothers, Detroit, has taken the local retail agency for the master primer and is opening a service station on Jefferson avenue.

**A. E. De Clercq** has resigned as metallurgical engineer for the Chalmers Motor Co. to join the Wright-Martin Airplane Co., New Brunswick, N. J., in a similar capacity.

**F. F. Wood**, formerly assistant sales manager for the Grant Motor Car Corporation of Toledo, is now manager of the new sales and service station at 236 Ottawa avenue, Grand Rapids, Mich. He was with the Ford Motor Co. of Detroit for several years.

**Lawrence Broering** has been added to the sales force of the Mason Tire and Rubber Co. His headquarters will be at Chicago.

**William A. Reynolds** is district manager for the Goodyear Tire and Rubber Co. in New York City, succeeding A. A. Lyon, who is now special representative. Mr. Reynolds was formerly in the industrial development department.

**C. W. Lynn** has resigned from the Parker Automobile Co., Haynes distributor, and is now district manager of the H. B. Browning Auto Co.

**Ralph C. Kirk** has been appointed retail sales manager for the Yesnor Motor Co., Dallas, Tex. He was for several years selling Paige cars in Texas.

**J. H. Newmark**, manager of the advertising division of the Chevrolet Motor Sales Speeder," a pamphlet containing a large number of prepared advertisements, also a fine series of follow-up letters, with display cards for the agents for sales rooms and other information.

**O. J. Rohde** has been appointed service manager of the Wire Wheel Corporation of America. Mr. Rohde has been in the automobile business for several years and has held prominent positions.

**John Sturgess** has joined the engineering staff of the Stanley Motor Carriage Co. of Newton, Mass., manufacturers of the well known Stanley steam cars. Mr. Sturgess has had a wide experience in steam engineering and allied lines, as well as in factory organization and production methods. For many years he was with the Platt Iron Works Co. of Dayton, O., specializing on power plant designing and construction.

**Stanley M. Cramer** has gone to Camp Sherman, Chillicothe, O., with the Akron contingent. He was in the advertising department of the Marathon Tire and Rubber Co., Cuyahoga Falls, O.

**Samuel K. Pittman**, assistant treasurer of the Willys-Overland Co., Toledo, O., died suddenly. Mr. Pittman came to the Willys-Overland organization two years ago from the Detroit Steel Products Co., of which he had been treasurer.

**Arthur H. Hertz** has been appointed as factory sales representative on the Pacific coast by the O. Armleder Co., Cincinnati, O. His headquarters will be at 112 Market street, San Francisco, Cal. He will cover the entire west coast.

**Arthur H. D. Altree** has tendered his resignation as vice president of the Bosch Magneto Co., as manager of credits, sales and service, which will come effective Jan. 15. Mr. Altree was a pioneer in the automobile business, having been first general manager of the Daimler Motor Co. of Coventry, England.

**Ambrose Monell**, president of the International Nickel Co., has been commissioned a colonel on the staff of the commander of the American aviation forces abroad. He has resigned the presidency of the International company.

**Elton Parks** was elected a director of the Maxwell Motor Co. to succeed George H. Burr.

**Pierce G. Smith** has been appointed general sales manager of the American Malleables Co., Detroit, Mich. He was formerly assistant sales manager of the company and will be located at the main offices of the plant at Lancaster, N. Y.

**Willard S. French**, recently appointed director of sales of the Monarch Governor Co. of Detroit, Mich., is well known in the automobile trade. Mr. French before going to the Monarch was a member of the C. S. Von Poettgen Advertising Agency, and prior to that connection was advertising manager of the Denby Motor Truck Co.

Willard S. French, Sales Manager, Monarch Governor Co., Detroit, Mich.

**A. Thomas Schooley** is now district manager for the Commerce Motor Car Co., and will have charge of Texas, Oklahoma, Kansas and Western Missouri.

**William L. Colt** is the new manager of the Willys-Overland branch in New York City. Mr. Colt is an executive of broad experience in manufacturing, wholesaling and retailing.

**Frank H. Tomlinson** has been appointed manager of the Commonwealth Finance Corporation, 100 Broadway, New York City. He will take care of the retail collection department. Other staff changes in the corporation are: Clarence H. Sanderson, formerly of the Burroughs Adding Machine Co., has been appointed manager of the wholesale collection department; H. Condit Johnson, now office manager, was formerly of the Newark Sign and Poster Advertising Co. of Newark, N. J.

A. R. Cosgrove, Sales Manager, Martin Truck and Body Corp., York, Pa.

**A. R. Cosgrove** has been made sales manager of the Atlas truck division of the Martin Truck and Body Corporation, York, Pa., and assumed the duties of that position. Mr. Cosgrove is widely known in the power vehicle industry and trade, having been associated with it in different capacities for a number of years.

**Pierre Blommers** has been appointed to the position of special factory representative of the Marathon Tire and Rubber Co., Cuyahoga Falls, O. P. L. Niles, formerly western manager for the Republic Rubber Co., at Kansas City, becomes manager of Marathon's New York division, succeeded Mr. Blommers.

**A. F. Knoblock**, formerly vice president and general manager of the Cole Motor Co., Indianapolis, Ind., has been appointed works manager of the Cleveland Tractor Co., Cleveland, O., makers of the Cleveland track layer tractor. Mr. Knoblock has been identified with the automotive industry for many years, having been one of the founders of the Northway Motors Co. about 16 years ago and later associated with the General Motors Co. in a managerial capacity.

**W. O. Rutherford**, general sales manager of the B. F. Goodrich Rubber Co., has accepted the assignment of chairman of the campaign to raise in Akron, O., $125,000 for Y. M. C. A. work in the United States and French cantonments.

**Lester E. Gibson** is now at Cape Town, S. A., in the interests of the Hupp Motor Car Corporation. He has been for the last five years Pacific coast representative. Before returning he will tour South Africa and Spain.

**Harvey Stewart** has been placed in charge of the foreign sales department of the Paige-Detroit Motor Car Co. He represented the company abroad before the war and more recently has been in charge of New York and eastern territory.

**T. J. Litle** has been appointed research engineer for the Cadillac Motor Car Co., directing all research work, experimental laboratories and carburetor development. He was formerly chief engineer of the Welsbach Co.

**Homer McKee**, advertising manager of the Premier Motor Corporation, Indianapolis, Ind., has resigned and organized the Homer McKee Co., Inc., Cleveland. Aaron Wolfson is vice president and Fred H. Hoover secretary and treasurer. The company will distribute Premier cars, J-Y tractors and the Hoosier sub carburetor.

**W. K. Webber** has been appointed general eastern traveling sales representative for the Wallace C. Hood Service Bureau. He was formerly sales manager for the Conley & McElroy Machinery and Engineering Co. Mrs. C. E. Lee has become assistant secretary of the bureau. Richard Turner, city salesman, has resigned to join the Curtiss Aeroplane Co., Buffalo, N. Y.

**W. L. Agnew** has been elected vice president and general manager of the F. E. Stuyvesant Motor Co., Cleveland, O., distributors of the Hudson Super Six car. He was formerly director of advertising and publicity for the Chalmers Motor Co.

W. L. Agnew, Manager of F. E. Stuyvesant Motor Co., Cleveland, O., Distributors of Hudson Cars.

**Fred Allison**, one of the founders of the A. B. C. Starter Co., has resigned as a director of the concern in compliance with one of the rules of the Ford Motor company, which provides that none of its men should be interested in the conduct of other firms.

**Roy S. Davey**, formerly advertising manager of the Chalmers Motor Car Co., has been appointed assistant sales manager of the Bethlehem Motors Corporation, Allentown, Pa.

**W. P. Wood**, general manager of the Pittsfield Spark Coil Co., Pittsfield, Mass., died recently. He organized the company in 1904.

# ANNOUNCING TRADE OUTLET

## Accessory and Garage Journal, Motor Truck, Automobile Journal, New Special Feature for Manufacturer, Dealer, Motorist and All Classes of Allied Service.

THE Trade Outlet, a new service feature, now announced by the Automobile Journal Publishing Co., incorporates in the advertising pages of three magazines, the Automobile Journal, the Motor Truck and the Accessory and Garage Journal, a distinct class of helps for all the readers of these journals, motorists, manufacturers, dealers or the thousands of workers in varied capacities in the trade and industry. Every reader is a buyer of some of the materials or service which are advertised in these columns.

The motorist may be looking for parts, equipment, make or model of car or accessories; the dealer is looking for used car parts; the manufacturer for materials and services, including individual services in all sorts of employed capacities—to mention most briefly the merest few of the thousand and one ends to be served.

The Trade Outlet is unquestionably the most unique, effective and economical market place in the world for everything connected with the automobile and automobile industry. It reaches 75,500 buyers, grouped in classes who are constant, shrewd and consistent purchasers of the materials and services that they need. Their needs never end and they are the one class of people on this great, busy earth who have constant communication with the horn of plenty. They know the value of a nimble dollar and have done more to keep money in active circulation in the past few years than any other class.

The readers of these magazines buy from one another and sell to one another. They have opportunity in the Trade Outlet to make their own bargains known and watch out for the other fellow's bargain offer.

The Trade Outlet reaches out its services to 25,000 garages, factories, service stations, repair shops, machine shops, accessory dealers and traders in the Accessory and Garage Journal. The Trade Outlet goes before 6000 truck owners and users, 1500 truck dealers and service stations in Motor Truck. The Trade Outlet goes to 35,000 owners of passenger cars in the Automobile Journal and 8000 car dealers, service stations, garages and repair shops in the Automobile Journal.

It is the superlative market place for anything that has value for new cars, used cars, parts, fittings, equipment, machinery, tools, accessories, supplies, and at extremely moderate rates.

Mutual interest directs attention to the Trade Outlet announcements. Long ago the advancements of modern advertising inculcated the lesson to never lay down the book without carefully scanning the advertisements. To motorists and all connected with the industry the materials and services offered from the first page to the last possess the keenest attractiveness and value. With their wide range of subjects, the Trade Outlet presents all the value of a classified section. A most pleasing variety is presented and the end of many a long and weary search for that one particular part, fitting, service or piece of equipment is resting in the announcements of the Trade Outlet.

Finally, reader, don't lay this copy down without consulting the Trade Outlet.

For rates and full information write today.

**AUTOMOBILE JOURNAL PUBLISHING COMPANY,**
**Times Building, Pawtucket, R. I.**

# Elgin Adds An All-Weather Sedan Model

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**Manufactured by the Elgin Motor Car Corp., Chicago, Ill., combining the appointments and features of the most luxurious enclosed bodies. Its general specifications are identical with those of the Elgin five-passenger touring car and roadster models, the wheelbase being 117 inches, and the front wheels are fitted with Timken bearings. Doors fitted with metal flappers and each provided with a liberal sized pocket. Elgin is making a liberal offer on a dealer proposition and appointing dealers in territory not already covered.**

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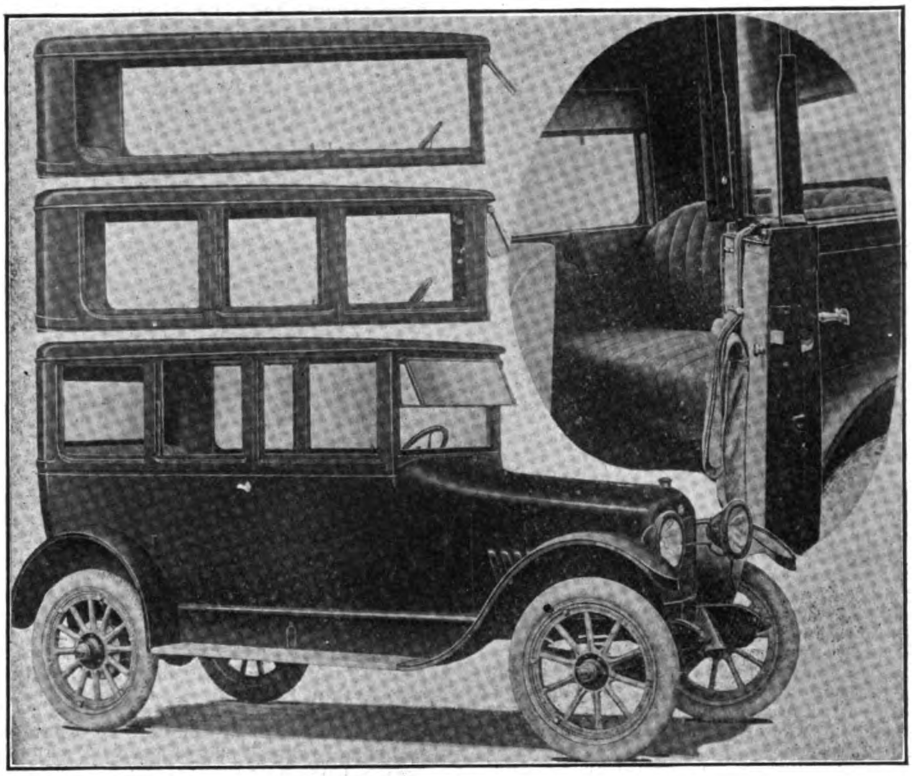


**Elgin Six Sedan Model, Showing Also an Interior View and the Top with Windows and Frames Removed. Sells for $1645 f. o. b. Chicago.**

# NEW CONCERNS RECENTLY INCORPORATED.

## Monthly Record of New Business Houses for which Charters Have Been Issued In the Various States and Classified According To Nature of Business.

### Newly Organized Manufacturers of Cars

**Dover, Del.;** American Motor Car Co.; $150,000; to manufacture automobiles.

**Dover, Del.;** Detroit Carries and Manufacturing Co; $1,000,000; to manufacture automobile; C. L. Rimlinger, N. N. Clancy, Clement M. Enger.

**Wilmington, Del.;** The Ebert Tractor Co.; $5,000,000; C. L. Rimlinger, F. A. Armstrong, Clement M. Enger.

**Chicago, Ill.;** Service Motor Supply Corporation; $207,000; to manufacture and deal in automobiles, supplies and accessories.

**Camden, N. J.;** Rush Motor Truck Corp.; $100,000; to manufacture automobiles and delivery trucks.

**Cleveland, O.;** Cuyahoga Tractor Co.; $5000; Louis R. Schlundt, Otto Schlitt.

**Newark, N. J.;** Devoe-Smith Co.; $50,000; to manufacture automobiles and carriage wagons.

**New York, N. Y.;** The Overton Truck Sales Co., Inc.; $30,000; J. H. Kutner, S. Stein, H. A. Lewis.

**Sedro-Wooley, Wash.;** Lone-Star Truck Co.; $125,000; C. E. Starr, J. A. Thompson, W. H. Sheasby.

**Milwaukee, Wis.;** Rathmann Motor Truck Co.; $10,000; Louis Rathmann, Carl H. Juergens, Edna Blats Rathmann.

### Parts and Fittings Makers Incorporated.

**Dover, Del.;** Bonner-Charter Motor Co.; $5,000,000; to manufacture and sell gasoline engines and motors.

**Dover, Del.;** Davis Carburetor System Co.; $500,000; W. O'Keefe, E. E. Wright, M. Gehrman.

**Dover, Del.;** Jack Patch Mfg. Co.; $24,500; to manufacture and sell automobile tires repair material known as "Jack Patch;" J. Russel Jack, Charles E. Jack, John A. Bower, Thomas J. Killian, Louis B. Jolly.

**Wilmington, Del.;** Dunham Body Co.; $250,000; to manufacture bodies for automobiles; William F. O'Keefe, George G. Steigler, E. E. Wright.

**Chicago, Ill.;** Breska Motor Co.; $15,000; James F. Pavilicek, Otto F. Ring, Frank Posvic.

**Chicago, Ill.;** Up-to-Date Machine Works; $25,000; to manufacture automobile parts and accessories and screw machine products.

**Peoria, Ill.;** Bradfield Sales Co.; $25,000; to manufacture and sell automobile parts and accessories; J. S. Bradfield, H. S. Bradfield, C. F. Bradfield.

**Trenton, N. J.;** Turbo Motor Co.; $100,000; to manufacture motors; William W. McElrath, Jr., W. H. Galway, W. H. William, C. H. Karnes, L. S. Randolph.

**Brooklyn, N. Y.;** Brooklyn Commercial Body Co., Inc.; $1000; to deal in automobile bodies; Lewis F. Wood, Francis L. Wood, Omer S. Bucke.

**Brooklyn, N. Y.;** Globe Auto Radiator Mfg. Co., Inc.; $5000; H. Kaplan, A. and B. Greenblatt.

**Buffalo, N. Y.;** Cary Motors Corp.; $10,000; S. L. Cary, H. A. Brundige, H. Kelley, L. and S. Bernstein.

**New York, N. Y.;** The Sales & Service Co.; $30,000; commission merchants and to make motors, engines and flying machines; L. W. Mulford, W. R. Couch.

**New York, N. Y.;** H. B. Shontz Co.; $50,000; to make motors, engines and electrical batteries; J. A. Smith, H. B. Shontz, P. J. Durham.

**New York, N. Y.;** Wire Wheel Repair Co., Inc.; $5000; to deal in wire wheels; Harry H. Jones, Alan C. McDonnell.

**Newburg, N. Y.;** Universal Air Motor System, Inc.; $50,000; J. and J. Grazino, W. W. Babcock.

**Rochester, N. Y.;** Perfecto Traffic Corp.; $60,000; to deal in motors; H. D. Hutcheson, W. B. Hopkins, F. E. Olmsted.

**Queens, Long Island, N. Y.;** Motor Starter Corp.; $2,000,000; to manufacture motors, motor starters; Richard Delafield, Sylvester W. Labrot, Samuel McSaberb.

**Yorkville, N. Y.;** Whitestown Motor Co.; $6000; C. M. Waterbury, W. E. Wind, R. W. Capron.

**Cincinnati, O.;** The Simplex Controller Co.; $5000; Clarence E. Ogden, W. N. Simlick, W. Katzenberger, Oliver W. Sharman, Delia N. Ogden.

**Youngstown, O.;** The Mannweller Co.; $5000; F. Ralph Manweller, Roy C. Kuhns, Henry J. Kuhns, John W. Kuhns, Mrs. Ralph Manweller.

**Youngstown, O.;** The York Motor Sales Co.; $10,000; C. A. Gifford, A. W. Gifford, James J. Hill, H. A. Hill, L. M. Salsgiver, M. Salsgiver.

**Miami, Okla.;** L. E. L. Motor Co.; $8000; Lon Edwards, E. A. Liles, J. B. Leekinzy.

**Allentown, Pa.;** Allentown Motor Co.; $100,000; Franklin L. Mettler, F. L. Mettler, M. E. Mettler.

**Philadelphia, Pa.;** Bonner-Charter Motor Co.; $5,000,000; to manufacture gas and gasoline engines; E. B. Phillips, J. B. Bailey.

**Philadelphia, Pa.;** Parker Motor Sales

Co.; $60,000; Edward N. G. Davis.

**Dallas, Tex.;** Shelton Henderson Motor Co.; $10,000; Robert F. Shelton, W. W. Shelton, V. H. Henderson.

**Sioux Falls, S. D.;** Verdon Motor Co.; $25,000; E. G. Elliott, Leo N. Green, Ella Green, John Green, P. J. Nelson.

**Spokane, Wash.;** The Simplex Auto Wheel Co.; $1,000,000; W. A. Black, M. O. Field, S. D. Lemley.

## Garages and Repair Shops Newly Chartered.

**Birmingham, Ala.;** Katz-Nelson Garage Co.; $5000; Frank Katz, J. Cartson, Nelson J. W. Dukes.

**Tuckerman, Ark.;** The Tuckerman Garage; $5000; to conduct a garage.

**Laconia, Conn.;** Laconia Tavern Garage; $20,000; to operate a garage business; George D. Mayo, Wm. F. Knight, Frank H. Lougee, Henry B. Clow, Joseph Hyams, Charles W. Tyler, True E. Prescott, Charles W. Vaughan, James McGloughlin, Charles G. St. Clair, Walter L. Huse, Arthur D. O'Shea, Edwin M. Heard.

**New Haven, Conn.;** Connecticut Auto & Cycle Garage, Inc.; $5000; Abe J. Liss, Isreal H. Pletman.

**Rensselear, Ind.;** Central Garage; to operate a general supply and repair garage business; Firman Thompson, Richard D. Wangelin, Emmet M. La Rue.

**Detroit, Mich.;** Detroit Garage, Inc.; $20,000; J. Fisher, J. H. Armstrong, Winship Cabaniss.

**Brooklyn, N. Y.;** Garely Garage, Inc.; $5000; Nathan Abramowitz, Samuel Perlmutter, Samuel S. Rebenstein.

**Brooklyn, N. Y.;** Municipal Garage: $100,000.

**Brooklyn, N. Y.;** Park Plaza Motors; $10,000; to conduct a garage business; M. J. Tymoff, M. Suringarm, J. A. O'Brien.

**Brooklyn, N. Y.;** Willoughby Garage; $5000; J. H., W. H. and S. Small.

**Dansville, N. Y.;** The Dansville Buick Garage, Inc.; $8000; to conduct a garage business; John C. Vandevener, Thomas J. Carbrey, Fred R. Driesbach.

**New York, N. Y.;** Downtown Garage Co., Inc.; $5000; to operate a garage business; James Weldon, James S. Readon, Daniel L. Readon.

**New York, N. Y.;** C. F. Gilmour Co., Inc.: $50,000; to conduct an auto garage business; C. H. Bishop, H. A. Bonnell, H. R. Bliss.

**New York, N. Y.;** Kenmare Auto Co., Inc.; $10,000; to conduct a garage; Isidor Berger, Samuel Tessler, Barnet Siegel.

**New York, N. Y.;** Motor Car Maintenance Co.; $5000; to conduct an automobile and garage business; J. H. Bord, W. C. Clark, E. Beugent.

**New York, N. Y.;** Charles H. Smith Garage and Repair Co., Inc.; $2000; Charles H. Smith, Leonard Klein, Selma L. Tamsky.

**West Allis, Wis.;** Dickson Motor Car Co.; $10,000; to conduct a garage and automobile sales business; Robert Dickson, Joseph E. Tierney, C. J. Moritz.

## Dealers in Automobiles and Motor Trucks

**Dover, Del.;** Oliver Co.; $10,000; to deal in automobiles; C. L. Rimlinger, F. A. Armstrong, Clement M. Enger.

**Dover, Del.;** Russel Motor Car Co.; $1,000,000; Arthur W. Britton, Samuel B. Howard, George V. Reilly.

**Springfield, Ill.;** People's Motor 'Bus Co.; $5000; J. J. Scanlan, Joseph A. Longrigan, A. H. Shelton, Henry Bogaske, R. E. Woodmansee, George P. Lischer, Duncan McDonald.

**Indianapolis, Ind.;** Holcomb-Siess Sales Co.; $25,000; to buy and sell automobiles and their parts; Howard L. Holcomb, Fred C. Siess, L. L. Zapr.

**Laporte, Ind.;** Auto Stores; $37,500; to deal in automobiles; William P. Honan, Dallas E. Zener, Lynnie K. Zener.

**Logansport, Ind.;** Cass County Motor Co.; $10,000; to buy and sell automobiles, parts and supplies; George J. Brooker, C. A. Frey, Ruby C. Frey, Jennie Brooker.

**Fort Dodge, Ia.;** Webster County Auto Co.; $10,000; W. W. Shrum, C. V. Coke.

**Louisville, Ky.;** The Glosbrenner-Magruder Co.; $6000; to deal in motor vehicles; J. C. Glosbrenner, R. A. Magruder, L. D. Magruder.

**Boston, Mass.;** C. S. Ranson, Inc.; $50,000; to deal in automobiles; Charles S. Ranson, Orlando P. Discomb, treasurer; Henry D. Nunn, clerk.

**Lawrence, Mass.;** E. Burnham Co.; $10,000; to deal in automobiles; Eugene E. Burnham, William H. Higgins, John C. Sanborn.

**Malden, Mass.;** Malden Motor Sales Co.; $20,000; to deal in automobiles; president, Harry S. Stratton; treasurer, Joseph Hart; clerk, Carl H. Stratton.

**Northampton, Mass.;** Henessey Manufacturing Co.; $100,000; to manufacture and deal in motor vehicles and trucks; D. Edward Henessey, Berthold A. Oppenheimer, Abraham E. Snow.

**Detroit, Mich.;** Car Owners' Co-Operative League; $10,000; Harry W. Harris, Joseph N. Green, Minnie M. Pierce.

**Detroit, Mich.;** Nash Distributing Co.; $15,000; H. A. Bauer, G. R. Williams, C. McGree, J. C. Gerken.

**St. Louis, Mo.;** The R. S. Motor Car Co.; $2000; W. A. Schwartztrauber, A. J. Reidinger, Arthur Reiding.

**Hackensack, N. J.;** J. W. Terhune Co.; $5000; to deal in automobiles; Charles Rosenberg, John T. Terhune, M. Terhune.

**Jersey City, N. J.;** Appel Auto Trucking Co.; $25,000; to conduct a general trucking business.

**Brooklyn, N. Y.;** Byk Auto Sales, Inc.; $1200; to conduct an automobile business; Leo P. Byk, D. G. Byk, William Baruch.

**Buffalo, N. Y.;** Cary Motors Corporation; $10,000; to deal in motors and trucks; Sherman L. Cary, Harry A. Brundige, Harold Kelley.

**Brooklyn, N. Y.;** Clarenden Sales Co., Inc.; $75,000; to deal in automobiles; Reginald E. Ford, Harry L. Ford, Walter S. Harlow.

**Buffalo, N. Y.;** Van Dyke Black & White Taxicab Corporation; $25,000; G. E., F. A. and M. L. Van Dyke.

**New York, N. Y.;** Elysee Garage and Automobile Co.; $50,000; W. Metkiff, V. M. and S. Hamilton.

**New York, N. Y.;** Indian Head Auto Truck Service; $30,000; P. J. Fox, G. and S. Muroney.

**New York, N. Y.;** Liberty Tractor and Truck Corporation; $250,000; to deal in motor tractors; Bertram Eversley, G. Harold Selleck, G. Cohen.

**New York, N. Y.;** Taylor-Twyman Corporation; $10,000; to deal in automobiles; C. K. Christy, W. J. Hefferman, E. F. Twyman.

**New York, N. Y.;** The Wright Auto Service Corporation; $10,000; to deal in automobiles; Robert J. B. Wright, Thomas Mackenzie, Stanley Husted.

**Rochester, N. Y.;** Auto Sundries Corporation; $7000; to conduct a trucking, taxicab and parcel delivery business; C. W. Young, J. L. Conniff, L. J. Collins.

**Rochester, N. Y.;** Ontario Auto Co.; $10,000; E. G. Werp, A. A. Kirchhoff, C. I. Collins.

**Staunton, N. Y.;** Staunton Motor Co.; $25,000; to conduct an automobile business; president, J. N. Garber; secretary, C. A. Crowell.

**Syracuse, N. Y.;** Berkshire Motor Car Co., Inc.; $20,000; to deal in automobiles; David Grody, Sarah Grody, Simon Silverman, Jr.

**Grand Forks, N. D.;** Grand Forks Storage Co.; $25,000; to conduct a storage warehouse for automobiles.

**Springfield, O.;** The Burke Motor Co.; $9000; to deal in automobiles; Charles J. Burke, Harley C. Hesterran, Anna J. Burke, James A. Linn, Forest S. Wolf.

**Oklahoma City, Okla.;** Auto Clearing House of Oklahoma; $100,000; William R. Jones, J. D. Coles, A. F. Decker.

**Clearfield, Pa.;** The Fullington Auto 'Bus Co.; $5000; Richard Fullington.

**Philadelphia, Pa.;** Frankford Taxi Co.; $10,000; to manufacture and sell automobile supplies; Elizabeth S. Beddow, Harry A. Beddow, George Schlafer.

**Pittsburgh, Pa.;** Non-Skid Motor Car Co.; $300,000; Wilber A. McCoy, Charles H. Jones, W. I. N. Lofland.

**Scranton, Pa.;** Penn Auto Sales Co.; $50,000; to do a general automobile business; Harold E. Connell, H. A. Connell, Grace L. Connell.

**Ft. Worth, Tex.;** Packard Auto Rent Co.; $12,500; for the purpose of livery and transfer; J. W. Tholl, T. A. Pitman, J. R. Bower, T. Bower.

**Salt Lake City, Utah;** Parowan Auto Co.; Samuel A. Halterman, John Bayless, J. Clayton Mitchell, Wilford Day, Joseph B. Dalton.

## Accessories, Equipment and Supplies

**Dover, Del.;** Rubber Insulated Metals Corp.; $500,000; C. L. Rimlinger, M. M. Clancy, C. M. Enger.

**Anderson, Ind.;** Kant Freeze Radiator Cover Co.; $20,000; to manufacture and produce automobile radiator equipment; Allen C. Shimmer, Wm. J. Norton, Charles T. Norton.

**Portland, Me.;** National Motor Equipment, Inc.; to deal in automobile tires, tubes, shoes and accessories of all kinds.

**Boston, Mass.;** Loxol Sales Co.; $50,000; president, Louis O. Demers; treasurer, Russell B. Locke; clerk, Phillips A. Painchaud.

**Boston, Mass.;** C. S. Ranson, Inc.; $50,000; Charles S. Ranson, Orlando P. Discomb, treasurer, Henry D. Nunn, clerk.

**Great Falls, Mont.;** Montana-Idaho Auto Speed Signal Co.; $25,000; G. F. Hughes, Ben R. Comings, A. E. Benson.

**Jersey City, N. J.;** Fidelity Tire and Rubber Co.; $5000; Richard Kramer, Clason Poist, L. L. James, L. Meltzer.

**Newark, N. J.;** Tanner's Products; $2,000,000; C. M. Rimlinger, F. A. Armstrong, Clement M. Enger.

**Trenton, N. J.;** Yardville Rubber Specialty Co.; $10,000; to manufacture rubber goods; Solomon Berman, Solomon J. Lewis, Harry Johnson.

**Woodcliff, N. J.;** Willis Bumper Co.; 968 Broadway; $100,000; to manufacture bumpers for automobiles.

**New York, N. Y.;** Automatic Auto Signal Mfg. Co., Inc.; $3000; Barnet Fosenfield, Joseph Berger, Herman G. Rabinowitz.

**New York, N. Y.;** Barber & Hornow, Inc.; $3000; to deal in automobile devices; J. Harry Hearnen, John S. Hornow, Herbert W. Barber.

**New York, N. Y.;** Eureka Specialty Mfg. Co., Inc.; $100,000; to manufacture automobile accessories and general specialty manufacturing business; W. H. David Tottenville, M. W. Richard, E. M. Carlson.

**New York, N. Y.;** International Auto Slip Cover Co.; $5000; to manufacture auto seat covers; Harry J. Callse, John P. Ford, Jr., Julius Fine.

**New York, N. Y.;** Overton Truck Sales Co.; $30,000; J. H. Kutner, S. Stein, M. A. Lewis.

**New York, N. Y.;** Otter Mfg. Co., Inc.; $100,000; to deal in automobile supplies; L. May, S. and M. M. Otter.

**Rochester, N. Y.;** Pilot Tire and Rubber Co., Inc.; $50,000; to buy, sell, manufacture and deal in tires for automobiles; Joseph M. Johnson, Frederick E. Brown, Arthur L. Dunton.

**Akron, O.;** Akron Motor Signal Co.; $5000; Joseph C. Zuendel.

**Cleveland, O.;** The Best Rubber Co.; $10,000; Henry Merkel, W. J. Martin, Wm. W. Taylor, Edward Hoblay, G. V. Goetsfried.

**Cleveland, O.;** The Grant-Denmo Sales Co.; $10,000; Carl F. Shuler, C. E. Curphey, Catherine Murman, Louise Griffiths, V. P. Reiber.

**Warren, O.;** The Aristos Co.; $50,000; to deal in automobile accessories; Fred T. Petrel, Paul A. Homer, Martin Petrel, Peter Gresser, George T. Heklinger.

**Charleston, S. C.;** The National Motor Sales Co.; $5000; president, John C. Slattery; secretary and treasurer, H. George Tietjen.

**Waco, Tex.;** McCauley-Ward Motor Supply Co.; $25,000; C. O. McCauley, Joe L. Ward, Jake Heyman.

**Tonasket, Wash.;** Wickersham Motor Co.; $5000; Floyd Wickersham, A. J. Wickersham.

**Wenatchee, Wash.;** The Buick Sales Co.; $5000; William Creig, S. M. Sim, C. D. Halferty, Jr., J. C. Lilly.

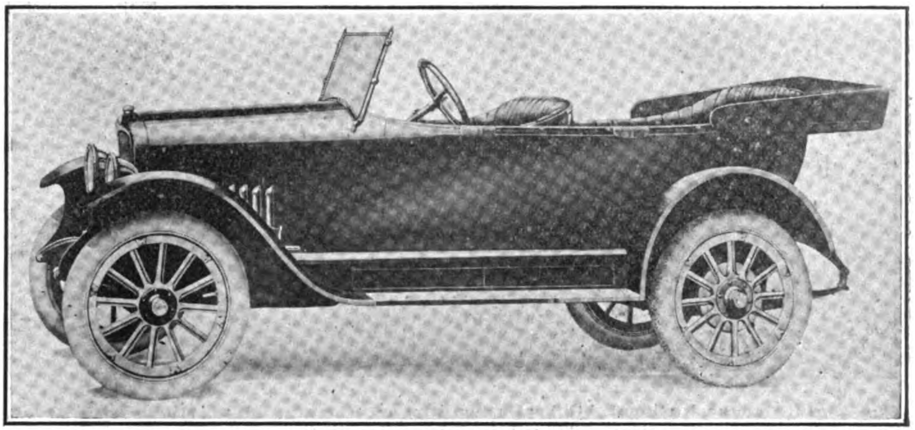
**Parkersburg, W. Va.;** Southern Sales Co.; $10,000; to operate an automobile accessories plant; A. K. Kunst, J. H. Camden, H. P. Camden, H. B. Depue, L. C. Pritchard.

**La Crosse, Wis.;** The Rybold-Weihaupt Auto Co.; $25,000; John G. Weihaupt, Martin W. Rybold.

**Wilmington, Del.;** Rochester Tire and Rubber Co.; $500,000; to deal in tires for automobiles and motorcycles.

**Huntington, W. Va.;** Sterling Auto Co., agency and supplies; $10,000; G. L. Titus. W. R. Titus, W. W. Driver, A. S. Driver and Ed. Stein.

## *Allen 41 Chassis 1918 Car*



**Five-Passenger Touring Model, Manufactured by the Allen Motor Co., Fostoria, O., and Priced at $1095. The Motor Drives Through an Allen Selective Transmission with the Unusual Gear Ratio of 4 5/11 to 1 for High as Compared to 14.25 to 1 for Low. Technical Description in the Automobile Journal, Nov. 10, 1917.**

# NEW BUSINESS CONCERNS AND CHANGES OF NAMES.

## The Month's Record of Transfer of Ownerships and Opening of Garages, Agencies, Branches, Service Stations and Repair Shops.

### Recent Transfers of Business Ownerships.

**Oakland, Cal.;** Paul Hoots is the new owner of the accessory and tire shop at 2285 Broadway.

**Oakland, Cal.;** C. B. Smith has purchased the interest of his partner, J. L. Cassaretto, in the Upper Fruitvale Garage.

**San Francisco, Cal.;** A. B. Barkman has purchased the Smith Garage at 819-25 Ellis street. N. B. Clarke has been appointed manager.

**Bloomington, Ill.;** A. E. Bark has sold his garage business to Frank Pendleton.

**Knoxville, Ia.;** H. J. Longaker and D. A. Noak have formed the Longaker & Noak Motor Co. They will conduct a garage and will sell the Chevrolet cars.

**Lovilla, Ia.;** C. C. Kitterman has purchased the garage formerly owned by Perry Vertz.

**Perry, Ia.;** The Service Vulcanizing Co. has been purchased by the Kergis Auto Co.

**Westbend, Ia.;** Joseph Weldinger has bought the interest of his partner, H. A. Sloan.

**Boston, Mass.;** The Ford Motor Co. has leased the new building at 96-98 Brookline avenue, where it will establish its local headquarters.

**Boston, Mass.;** Henry W. Savage, Inc., has sold the garage on St. Mary's street to Minnie A. Durgin. The garage will accommodate about 150 cars, each floor having an approximate area of 900 feet.

**Boston, Mass.;** Harry B. Wollaver and Walton W. Blunt have purchased the Three Fields Garage on Commonwealth avenue. In addition to operating a garage business they will carry a line of popular cars.

**Brown City, Mich.;** R. I. Hether has sold his garage and automobile business to Charles Trumble.

**Coopersville, Mich.;** Earl Thurston has sold his interest to Edward Harris. Earl Thurston will conduct a Ford agency at Cedar Springs.

**Detroit, Mich.;** The Kobl-Getfredson Horse Co. has leased its building at 1093-1113 Gratiot avenue to the Sampson Automobile Co.

**Detroit, Mich.;** The Towar-Ayres has sold its agency for Republic trucks, together with its building at 472-80 Lafayette boulevard, to the Grasser Motor Co.

**Janesville, Mich.;** Claude Credendall has purchased the service garage.

**Charlestown, Mo.;** L. T. Berthe and Paul Salmon have purchased the Dover Garage. The firm will continue to be known as the Charlestown Motor Co.

**Kearney, Neb.;** West & Preston have bought the Webster & Eickmeier auto shop, located on First avenue.

**New York, N. Y.;** The Peerless Motor Car Co. has leased about 4000 square feet of space at the southeast corner of Broadway and 63rd street, to be used as a sales room for Peerless cars.

**St. Louis, Mo.;** The Wilson Motor Car Co., distributor of Haynes and Elgin cars, has leased the new two-story fireproof building on Locust street.

**Salem, O.;** Clarence Briggs has sold his interest in the B. & B. Auto Machine Co. to Fred Howell.

**Stephensville, Ore.;** J. Hemley has purchased the garage formerly owned by Meyers & Doughty.

**North Adams, Vt.;** D. D. Hazen has purchased the property near Everett avenue, where he will erect a garage and service station.

**Tacoma, Wash.;** C. E. Alden and F. W. White have purchased the Tacoma Auto Co. and will operate a complete repair shop in addition to the merchandising of an extensive line of tires, parts and accessories.

**Ashland, Wis.;** Frank Asplund and Gustave Larson have formed a partnership to be known as Asplund & Larson. They will erect a garage on Third street, near Eighth avenue, West.

**Baraboo, Wis.;** The Maxwell Garage has been purchased by Sneathen & Shepard.

**Baraboo, Wis.;** Raymond Wheeler has purchased the garage business of Orriel Philbrick.

**Lathrop, Wis.;** The Elston Auto Co. has taken over the G. & H. Garage.

**Madison, Wis.;** G. E. Heath has sold his interest in the Arneson & Heath.

**Madison, Wis.;** T. D. Walker has sold his garage to Grim Brothers.

**Merrill, Wis.;** Charles Aronson has purchased the Lickel-Martin block on West Main stret. The buildings will be remodeled into a garage.

**Portage, Wis.;** S. W. Palmer and E. R. York have purchased the Portage Motor Car Co. from Fenner & Post.

**Viroqua, Wis.;** Leslie Johnson will succeed Atkins & Caldwell of the Solverson Garage.

**Wabeno, Wis.;** J. B. Mallow has sold his garage to M. A. Betts.

### Factories, Garages and Repair Shops.

**Dothan, Ala.;** Hallman & Co. are planning to erect a modern garage 40 by 100 feet.

**Los Angeles, Cal.;** William Garland is planning the erection of a two-story commercial garage on the southeast corner of 18th and Figueroa streets. The building, which will be 90 by 100 feet, will be occupied by the Pioneer Commercial Auto Co.

**Quincy, Ill.;** Judge S. A. Hubbard, Carl Hubbard and B. Frank Bladon are planning to build a model garage for the service of Quincy automobile owners.

**Washington, Ill.;** Oscar Plumton is building a garage near the Bayview Hotel to take care of his automobile livery business.

**Hammond, Ind.;** Walter Wolf is building a garage at 217-23 Logan street. It is estimated that it will cost $8000. The dimensions are to be 60 by 128 feet.

**Burlington, Ia.;** The Farmers' Motor and Supply Co. has purchased property for an annex. The addition is to be 90 feet by 117 feet and two stories in height.

**Spirit Lake, Ia.;** The Walker Motor Co. has started the erection of a new garage building.

**Worcester, Mass.;** The G. P. Hayden Co., 891 Main street, is planning the erection of a four-story addition to its present building to measure 875 by 60 feet and to

ELGIN SIX
WAR DEPT. ROAD

**The Elgin Six, the National All Trails Scout Car, Covered 6128 Miles with Hood, Transmission and Differential Sealed During a Trip from Chicago to San Francisco and Return. President Charles M. Hayes of the Chicago Motor Club, Meeting the Car, Broke the Seals He Had Placed Upon Car When It Left for the Pacific Coast.**

cost $750,000. The company distributes the Grant automobile.

**Chilton, Mich.;** The Meili-Blumberg Co. will erect a new garage.

**Springfield, Mo.;** The Southwestern Automobile and Supply Co. is erecting a garage on St. Louis street. It will cost $25,000.

**Alva, Okla.;** The Munson & McNeeley garage is nearing completion.

**Portland, Ore.;** Talbot & Casey, Ford agents, have erected a new two-story home on the corner of Grand avenue and East Ankeny street. The building measures 90 by 100 feet and will cost about $16,500.

**Sioux Falls, S. D.;** The Sioux Falls Reo Co. is erecting a two-story building on Dakota avenue, between Ninth and 10th streets. The building will be 50 by 150 feet and will have a capacity of 150 cars. The cost of the construction is estimated at $35,000.

**Appleton, Wis.;** The Appleton Auto Co has begun building its new plant at the corner of Pierce avenue and Eighth street. The structure will be of red faced brick and tile construction with a concrete foundation.

## New Business Locations and Removals.

**Oakland, Cal.;** The Auto Battery Co. is now in its new quarters at 2044 Broadway. J. L. D. Keppy is the manager.

**San Francisco, Cal.;** Bean Sons Co., E. San Fernando street, has moved to 660 Howard street.

**Hartford, Conn.;** Buick Garage Co., formerly located at 356 Main street, has moved to 51 Elm street.

**Louisville, Ky.;** The Kentucky Motor Sales Co. has moved into its new office and sales room at 930 South Third street.

**Chicago, Ill.;** Bonton Garage, 4008 Michigan avenue, has removed to 2226 East 70th street.

**Chicago, Ill.;** Chicago Auto Rim and Wheel Co., 1550 Indiana avenue, has moved to 2010 Wabash avenue.

**Chicago, Ill.;** Schuett Motor Car Co., distributors of Paterson cars, has moved to 2538 South Michigan avenue.

**Peoria, Ill.;** B. P. Motor Co., formerly located at 2010 Main street, has removed to 1108 N. Madison street.

**Rockford, Ill.;** The Auto Accessory Co. will move to a larger and more modern building at Church and Mulberry streets.

**Brazil, Ind.;** Otto Mohr will move his tire and automobile accessories store from its present location, East National avenue, to a new home in the Thomas block. In addition to the Firestone tire service department, a full line of Ford parts and accessories will be carried.

**Mason City, Ia.;** Cadillac Auto Co., 129 West Fifth street, has moved to 31 First street.

**Iowa City, Ia.;** The Namur Auto Co. has made its headquarters at 226 S. Clinton street. The company will maintain a service and sales station and will handle the Paige cars. W. E. Namur will be manager.

**Grand Rapids, Mich.;** the Hackett Motor Sales Co. has made its headquarters at 112 Louis street, N. W., under the management of Ted Armtz. They are the distributors of Hackett cars.

**Marquette, Mich.;** The Queen City Auto Livery has moved from 323 W. Washington street. The company will handle automobile accessories.

**St. Louis, Mo.;** The Denmo-Hundell Motor Truck Co. will be at Seventh street and Cass avenue.

**St. Louis, Mo.;** Histon & Thellemain, 2623 Nebraska street, has moved to 2920 Sidney street.

**St. Louis, Mo.;** The Pickett Puncture Proof Tire Co. will be located at 1909 Locust street. The company manufactures a combined inner tube, outer casing and metal rim for various sized wheels.

**Gendel, N. Y.;** Clinton Garage, 58 Badger avenue, has moved to 46 Baldwin street, Newark, N. J.

**New York, N. Y.;** Berien & Dustin Co., 42 Bury street, has moved to 25 N. 45th street.

**Toledo, O.;** The Toledo-Standard Motor Co. has made its headquarters at Madison avenue and 10th street. The firm will handle the Standard "eight."

**Memphis, Tenn.;** Wright Motor Car Co., 1605 Eastmarland street, has moved to 24 Marchel court.

**Burlington, Vt.;** The Austin Garage Co. has removed to larger quarters at 181 St. Paul street. The company handles Reo cars.

**Richmond, Wis.;** The Davis Brothers & Child Garage will move into new quarters on Thornton street, where it will have a floor area of approximately 6000 square feet.

## Agencies, Dealers and Service Stations.

**Lompoc, Cal.;** Charles Rudolph has been appointed KisselKar distributor.

**Los Angeles, Cal.;** The Echo Garage, located at 1553 Sunset boulevard, has been appointed to give service on Prest-O-Lite storage batteries.

**Oakland, Cal.;** Mullins & Costello have been appointed local representatives of the Power Rubber Co. Its headquarters will be at 2750 Broadway.

**San Francisco, Cal.;** The U. S. Vulcanizer Manufacturing Co. has opened a vulcanizing store at 216 Golden Gate avenue.

**Santa Barbara, Cal.;** E. F. Ruse & Co. have opened a tire shop at 716 State street and will handle the Racine Horseshoe tire.

**Stockton, Cal.;** The W. L. Maxwell Co. has been appointed to give service on Prest-O-Lite storage batteries.

**Kansas City, Kan.;** J. W. McMullen has organized a new firm to be known as the McMullen Motor Car Repair Co. He will locate at 829 Minnesota avenue.

**Houma, La.;** The Houma Garage has been appointed to give service on Prest-O-Lite storage batteries.

**New Ibera, La.;** Le Jeune Garage, 107 W. Main street, has added the Prest-O-Lite batteries to its line.

**Streator, Ill.;** Mulford, Crawford Motors Co. has completed its sales room at 202 W. Main street. The concern will handle the Velie, Marmon and Roamer cars.

**Oskaloosa, Ia.;** The White Way Auto Supply Co., 313 High avenue, West, has been opened by Allen Cunningham and John Cunningham.

**Gardner, Mass.;** The Manseau Battery Service Station, 8 W. Lynde street, is the newly appointed Prest-O-Lite battery station.

**Pittsfield, Mass.;** Frank Peters has been appointed to give service on Prest-O-Lite batteries. His headquarters will be on Main street.

**Springfield, Mass.;** The Dunbar Motor Co., local distributor for Oakland cars, is now in its new sales room at Stearns square.

**Jackson, Mich.;** The Miller Sales Co. has made its headquarters at the garage at 219-23 N. Jackson street. Besides operating the garage it will handle the Saxon, King and Elgin cars, and will carry a complete line of accessories.

**St. Louis, Mo.;** The Ayres Automobile Co. is now settled in its new quarters on North King's highway.

**St. Louis, Mo.;** The Weber Implement and Automobile Co. has opened a used car shop in a new three-story brick building at 21st and Pine streets. The new space will be devoted to the rebuilding of used cars.

**Omaha, Neb.;** Albert E. Bihler, Inc., has leased the entire new three-story and basement garage building at 1112-14-16 Dodge street.

**Asheville, N. C.;** The Asheville Automobile Co., at 15-17 South Lexington avenue, has changed its name to the Sawyer Motor Co.

**Monroe, N. C.;** The Secrest Motor Co. has been appointed to give service on Prest-O-Lite storage batteries.

**Philadelphia, Pa.;** The Atlantic Refining Co. has opened a new service station on the north side of Market street.

**Philadelphia, Pa.;** The New Idea Tire Store has opened at 1343 Girard avenue. The company in addition to retreading worn tires, also carries a complete line of new tires.

**Cuero, Tex.;** The Nagel Hardware Co 9-11 Main street, has been appointed to give service on Prest-O-Lite storage batteries.

**Seattle, Wash.;** Cottle & King have entered business at 1514 Broadway and will specialize in repair work.

**Detroit, Mich.;** Abbott Motor Car Sales has opened for business at 755 Cass avenue.

**Detroit, Mich.;** Swift Tire Repair Co. has opened for business at 1296 Mack avenue.

**Detroit, Mich.;** International Motor Co. has opened for business.

**Flint, Mich.;** Ford Sales Co., one of the largest Ford service stations in the country, has opened at 2510-2518 North Saginaw street.

**Toledo, O.;** Toledo-Standard Motor Co. has opened at Madison avenue and 10th street. They have the agency for the Standard Eight cars.

**Philadelphia, Pa.;** Electric Storage Battery Co. has opened an Exide service station at 1158 Cass avenue, Detroit.

# *Jackson Announces Flyer as 1918 Leader*

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**MECHANICAL FEATURES OF JACKSON 1918 MODELS.**

Engine, eight-cylinder, valve-in-head.
Bore and stroke, 3x3½ inches.
H. P., S. A. E., 28.80.
Lubrication, variable force feed.
Carburetor, Zenith duplex.
Ignition, Auto-Lite.
Starting and Light, Auto-Lite.
Clutch, disc.
Transmission, unit with engine.
Rear axle, full floating.
Wheelbase, 118 inches.
Tires, 34x4 inches.
Brakes, internal and external on wheels.
Springs, full elliptic.
Steering gear, worm and gear.

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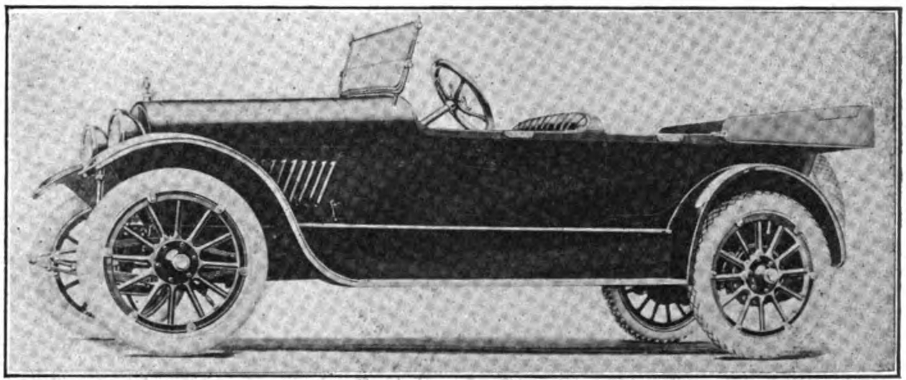


Manufactured by the Jackson Automobile Co., Jackson, Mich. Priced at $1575. A Long, Low, Racer Body, with the Straightline to the Back of the Car, Suggestive of the Touring Car Rather Than the Roadster Design for Four-Passenger Cars. Full Mechanical Description of This Model in the Automobile Journal of Oct. 25, 1917.

# RECORD OF NEW BUILDING PLANS IN NOVEMBER

## Contracts Made and Plans Contemplated for Alterations or the Building of Garages, Repair Shops, Service Stations and New Plants.

### Contemplated Plans and Specifications.

**Sheridan, Ark.;** Smart Automobile Co.; two-story garage; $12,000.

**Los Angeles, Cal.;** John Kahn, Inc., and Sam Behrendt; one-story garage, 70x152; at 1021-25 S. Grand avenue; $11,972.

**Sacramento, Cal.;** Goodrich, Ballard & Rouse; one-story garage, 80x160; at Seventh and M streets.

**Sacramento, Cal.;** Clara F. Graham and J. G. Black of Sacramento, and Minnie A. Bateman of San Francisco; one-story garage and sales room at Seventh and M streets; $9000.

**San Francisco, Cal.;** Smith & Kayser; one-story garage, 60x100; at Van Ness and Ivy avenues.

**Denver, Col.;** Iron Nicolette; one-story garage, 50x125; $10,000.

**Denver, Col.;** Jesse E. Fleming, First and Broadway; one-story garage; $2000.

**Denver, Col.;** E. H. Moorman, 100 Broadway; two-story garage, 37x125; $15,000.

**Greeley, Col.;** C. H. Ramsey; one-story garage, 100x135; $16,000.

**Bridgeport, Conn.;** Michael Hoffman; one-story garage, 100x91.

**Bridgeport, Conn.;** Nathan Engleman, 700 E. Main street; one-story garage, 22x28.

**Hartford, Conn.;** F. S. Campbell, 208 Park street; one-story garage, 50x99.

**Manchester, Conn.;** Lucius Elmer; one-story garage, 17x45.

**Wilmington, Del.;** W. J. & A. J. Hance, 704 W. Fifth street; two-story public garage, 22x89; $5000.

**Kissimmee, Fla.;** S. B. Aultman; one-story garage, 50x100; $8000.

**Atlanta, Ga.;** Wilson & Harris; one-story brick garage; $2000.

**Atlanta, Ga.;** Exposition Cotton Mills; two-story brick garage; $2000.

**Gainesville, Ga.;** Louis E. Wisdom; two-story garage, 55x125; iron and plate glass front.

**Metter, Ga.;** E. O. Meaddows & Brother; one-story garage, 30x120.

**Wichita, Ga.;** Fred C. Conner; one-story garage, 50x140; at 7 N. Topeka avenue; $18,000.

**Caldwell, Ida.;** W. J. Hodgson; one-story garage, 75x120; $14,000.

**Cairo, Ill.;** Standard Oil Co.; one-story garage, 24x30; $2000.

**Chicago, Ill.;** C. Ramberg, 645 Orleans avenue; one and two-story garage; $22,000.

**Chicago, Ill.;** H. A. Lund, 1910 N. Keystone avenue; one-story garage and shop, 125x110; $18,000.

**Chicago, Ill.;** S. S. Herman, 5243 Cottage Grove avenue; one-story garage, 50x26; $20,000.

**Chicago, Ill.;** O'Connelly Life Insurance Co.; one-story garage, 65x165; $25,000.

**Chicago, Ill.;** S. M. Seator, 35 N. Dearborn street; one-story garage; $20,000.

**Chicago, Ill.;** A. V. Teisen, 3325 Fullerton building; one-story garage, 99x161; $25,000.

**Chicago, Ill.;** J. F. Scheller, 4656 Cottage Grove avenue; one-story garage, 100x192.

**Galesburg, Ill.;** Galesburg Machine Works; one-story garage, 115x132; at Tompkins and Seminary streets; $50,000.

**Glenview, Ill.;** E. S. Jackson, care of Holabird & Roche, 104 S. Michigan avenue, Chicago; one-story garage, 20x30; $6000.

**Grand Crossing, Ill.;** John J. Dorr, 7120 Langley avenue, Chicago; one-story garage, 25x27.

**Henry, Ill.;** J. E. Barry & Co.; two-story public garage, 40x80; $10,000.

**Herrin, Ill.;** Davis Brothers, Marion, Ill.; one-story garage, 80x100; $20,000.

**Johnston City, Ill.;** Davis Brothers, Marion, Ill.; one-story garage, 80x100; $20,000.

**Quincy, Ill.;** Standard Oil Co.; one-story garage, 68x150; at 12th and Hampshire streets.

**Waterloo, Ill.;** O. H. Vogt; one-story public garage and sales room, 52x50; $4000.

**Auburn, Ind.;** Frank Shugars, G. S. Baxter and V. J. Davis; one-story garage, 66x165; $20,000.

**Indianapolis, Ind.;** Carl A. Fisher, care of Fisher Auto Co., 400 N. Capitol avenue; one-story public garage, 50x195.

**Indianapolis, Ind.;** State Construction Co, 803 Indiana Pythian building; one-story private garage, 40x50; $2000.

**Kokomo, Ind.;** Albert Schwenger, 613 S. Union street; 1½-story private garage, 33x20.

**Wolcottville, Ind.;** F. P. Sanders & Sons; one-story public garage, 50x150; $12,000.

**Blue Grass, Ia.;** H. D. Schroeder; one-story public garage, 30x120; $5000.

**Council Bluffs, Ia.;** Gorneweg & Schoentgen, Ninth and Broadway; one-story garage, 66x60; $2000.

**Lenox, Ia.;** Oliver & Steinkamp; one-story garage, 44x134.

**Stacyville, Ia.;** John Weber; one-story garage, 55x80; $6000.

**Coffeyville, Kan.;** Exner-Morgan Motor Co.; one-story garage, 25x125.

**Osage City, Kan.;** Miller & Schroeder; one-story garage, 50x140; $10,000.

**Summerfield, Kan.;** J. W. Woodward & Son; one-story garage, 26x40.

**Wichita, Kan.;** Mrs. W. A. Garlits, 312 S. Water street; one-story garage, 37x40; $3000.

**Wichita, Kan.;** Acme Garage, 124 N. Topeka street; one-story garage; $18,000.

**Monroe, La.;** Milner Motor Co.; brick automobile building for Ford agency, 80x120; $20,000.

**Winnfield, La.;** Max Theime; two-story brick garage, 55x100; $15,000.

**Bangor, Me.;** George W. Bassett; one-story garage, 40x90; $10,000.

**Van Buren, Me.;** I. I. Albert; two-story garage, 70x100; $12,000.

**Waterville, Me.;** Elmwood Hotel Co.; one-story garage, 100x125; $25,000.

**Baltimore, Md.;** Charles L. Hartman and James L. Ridgeway; three-story public garage at 1302-4 N. Calvert street; 75x117.

**Baltimore, Md.;** National Garage Co., care of H. O. Levin, 545 Calvert building; one-story garage, 22x100; $6000.

**Baltimore, Md.;** A. G. Snyder, 2141 Fairmount avenue; one-story garage, 22x42; $2000.

**Singerly, Md.;** T. W. Bachus, 1117 Franklin street; 1½-story private garage, 28x40; $6000.

**Belmont, Mass.;** John Butt, 427 School street, Watertown, Mass.; one-story public garage, 60x110.

**Boston, Mass.;** Weiss Co., 40 Court street; garage, 163x190; at Blue Hill and Woodrow avenues; $150,000.

**Boston, Mass.;** W. H. Partridge, 90 Westland avenue; two-story garage, 36x79 and 41x74; $20,000.

**Boston, Mass.;** A. Lobell, 77 Grove street; garage and sales room; $100,000.

**Boston, Mass.;** Thomas Kennedy and Thomas Kelly; one-story garage, 65x200;

**Watson Tractortruck Used by a Lumber Company to Make Delivery, Hauling a Semi-Trailer and Trailer, the Load Weighing Approximately 10 Tons. Made by the Watson Wagon Co. of Canastota, N. Y., Which Has Been Building Vehicles for Contractors' Use for Many Years.**

**Boston, Mass.;** Bella Vista Co., 36 Woodstock avenue; one-story garage; $50,000.

**Boston, Mass.;** Echlov & Abele; one-story garage, 46x166; at 308 Main street; $18,000.

**Cambridge, Mass.;** Newtone Garage Co.; one-story garage, 112x70; $25,000.

**Holyoke, Mass.;** Timothy H. Fowler, 273 Essex street; 1½-story private garage, 40x125; $5000.

**Lawrence, Mass.;** H. N. Peabody, 366 Broadway; one-story garage, 265x95; $50,000.

**Lawrence, Mass.;** Pacific Mills; 1½-story private garage, 25x36; $4000.

**New Bedford, Mass.;** David Methe, 223 State street; one-story garage, 49x90; $7000.

**New Bedford, Mass.;** Luigi Morelli; 231 Ash street; one-story garage, 40x73; $5000.

**New Bedford, Mass.;** Manuel E. Baptist, 34 Page street; one-story garage and storage station, 57x83; $6000.

**Pittsfield, Mass.;** George E. Shippey, 128 South street; two-story garage, 40x50; $7500.

**Somerville, Mass.;** James P. O'Neil; one-story garage, 80x107; $12,000.

**Somerville, Mass.;** Peter F. McSorley, 6 Beacon street; one-story garage, 60x90; $10,000.

**Somerville, Mass.;** Joseph Klein, Beacon and Scaremanton streets; one-story garage, 143x130; $30,000.

**Somerville, Mass.;** T. A. Dewire, 135 Beacon street; one-story garage; $5000.

**Springfield, Mass.;** Chaplin & Chaplin, 44 White street; one-story garage, 63x120; $15,000.

**Uxbridge, Mass.;** Uxbridge Worsted Co.; one-story garage, 30x70; $5000.

**Worcester, Mass.;** Jacob Burwick, 94 Front street; one-story garage, 132x50; $15,000.

**Worcester, Mass.;** Abraham Berkowitz, 5 Chapin street; one-story public garage and sales room; $20,000.

**Big Rapids, Mich.;** Pierre Lindhout, 304 National City Bank building; one-story garage and sales room, 45x130.

**Detroit, Mich.;** C. F. J. Barnes, 213 Kresge building; one-story public garage, 50x50.

**Detroit, Mich.;** Thomas Goodfellow; one-story garage, 84x76; $20,000.

**Detroit, Mich.;** Modern Garage Co.; 10-story garage, 75x100; at 33-39 Woodward avenue.

**Kent City, Mich.;** George W. Barrett; one-story garage, 48x100.

**Monroe, Mich.;** Sterling Dusseau, 11 S. Second street; two-story garage, 32x33; $3000.

**Brainerd, Minn.;** Woodhead Motor Co.; one-story garage, 75x125.

**Minneapolis, Minn.;** W. C. Anderson, 2408 Central avenue; one-story private garage, 18x45.

**Minneapolis, Minn.;** Starr Bullard Motor Co., 8 E. Grand street; one-story garage, 50x141.

**Minneapolis, Minn.;** Q. S. Sprague, 2908 S. Girard avenue; 1½-story private garage, 24x26.

**Morris, Minn.;** John Grove; one-story garage, 75x140.

**Pequot, Minn.;** Louis P. Solberg; one-story garage, 50x90.

**Pine City, Minn.;** P. W. Perkins; two-story garage, 48x150.

**Red Lake Falls, Minn.;** People's Auto Co.; one-story garage; $15,000.

**St. Paul, Minn.;** James Dietz; one-story concrete garage; $16,000.

**St. Paul, Minn.;** H. G. Allen; one-story brick and stone garage; $3500.

**Clarksdale, Miss.;** L. G. Hurlbutt; one-story brick garage and sales room; $5000.

**Hattiesburg, Miss.;** D. E. Edwards and R. C. McKenzie; one-story garage, 100x200.

**Chillicothe, Mo.;** Norman Motor Car Co.; one-story garage, 100x120; $15,000.

**Excelsior Springs, Mo.;** Harry Silvers; one-story garage, 80x110; $15,000.

**Joplin, Mo.;** W. A. Swann; two-story garage, 50x120; $10,000.

**St. Louis, Mo.;** F. J. Cronwell, 810 Chestnut street; one-story auto sales building, 51x80; $15,000.

**Weaubleau, Mo.;** Knight-Hardy Motor Co.; one-story garage, 43x80; $5000.

**Plattsmouth, Neb.;** Pollock Auto Co.; one-story garage, 60x120; $25,000.

**Portsmouth, N. H.;** F. E. Brooks and Dr. S. F. A. Pickering; one-story garage, 50x130; $25,000.

**Portsmouth, N. H.;** Shapiro & Brown. State and Pleasant streets; one-story garage, 50x90.

**Atlantic City, N. J.;** Louis Saltzman, 108 Virginia avenue; two-story garage and repair shop, 45x50; $5000.

**Newark, N. J.;** Willys-Overland Co., Plane and Hackett streets; one-story service station, 65x239; $55,000.

**Newark, N. J.;** Foster L. Hatch, 885 Clinton avenue; one-story garage, 60x75; $5000.

**Newark, N. J.;** Adolph Furst; one-story garage, 50x110; at 51-53 Pennington street; $10,000.

**Newark, N. J.;** Orion Banks; two-story garage, 70x100; at Springfield and Lyons avenues; $15,000.

**Newark, N. J.;** Dorfman Brothers, 57 Branford street; one-story garage, 45x100; $5000.

**Newark, N. J.;** Joseph Pinto, rear 22 Van Wagenen street; eight one-story garages, 18x130; $2500.

**Newark, N. J.;** Dilworth, Lockwood & Co.; 394 Frelinghuysen avenue; one-story garage, 24x50; $3500.

**Newark, N. J.;** Granite Realty Co., 786 Broad street; 33 garages and service stations, one-story each, 100x125; $12,000.

**Newark, N. J.;** Meyer Zemel, 27 Jones street; one-story public garage, 50x70; $5000.

**Westfield, N. J.;** Percy Lambert, 406 Westfield avenue; one-story garage, 60x125.

**Albany, N. Y.;** L. Sonberger, Grant and Central avenues; one-story garage; $5000.

**Brooklyn, N. Y.;** Meade Construction Co., 256 Meade street; 20 one-story garages, 10x200; $20,000.

**Brooklyn, N. Y.;** L. R. Realty Co., 189 Montague street; one-story garage, 60x100; $12,000.

**Brooklyn, N. Y.;** Clarence Tatern, 321 10th street; one-story garage, 50x100; $9000.

**Brooklyn, N. Y.;** Shampan & Shampan, 772 Broadway; one-story garage, 100x210; $50,000.

**Brooklyn, N. Y.;** Lewis Construction Co., 361 Fulton street; one-story garage, 148x105; $65,000.

**Brooklyn, N. Y.;** T. Church, 1344 Jefferson avenue; two one-story garages, 39x100; $6000.

**Brooklyn, N. Y.;** Frank Jeancarlo, 1470 67th street; two-story garage, 80x100; $25,000.

**Brooklyn, N. Y.;** Mary Tully, 1734 Pitkin avenue; one-story garage, 20x64; $2500.

**Brooklyn, N. Y.;** C. Telzenhardt, 127 13th street; two-story garage, 40x100; $10,000.

**Brooklyn, N. Y.;** James Babimo, 242 Frost street; one-story garage, 25x100; $4000.

**Brooklyn, N. Y.;** Laspia & Salvait, 525 Grand street; one-story public garage, 25x100; $5000.

**Brooklyn, N. Y.;** Emily McCormick, 833 St. Johns place; one-story garage, 25x70; $3000.

**Brooklyn, N. Y.;** Alonzo E. De Baun, 41 Liberty street, New York; one-story garage, 75x118; $10,000.

**Brooklyn, N. Y.;** H. M. Weckesser; four-story garage, 20x209.

**Brooklyn, N. Y.;** James F. McLaughlin Garage Co.; one-story garage; $1000.

**Buffalo, N. Y.;** Buffalo Builders' Supply Co., care of H. A. Brocas; one-story garage, 52x68; $10,000.

**Buffalo, N. Y.;** Vulcan Steam Forging Co.; one-story garage; $20,000.

**Buffalo, N. Y.;** Joseph Impellatera, 118 17th street; one-story public garage, 44x53; $5000.

**Buffalo, N. Y.;** George W. Schmitt, 336 Emslie street; one-story public garage, 73x68; $4500.

**Buffalo, N. Y.;** G. Morton Wolfe, 1377 Main street; one-story public garage, 45x95; $10,000.

**Cincinnatus, N. Y.;** Newcomb Hollister; one-story public garage, 40x60; $4000.

**College Point, L. I., N. Y.;** Joseph Hefner; 1½-story garage; 41x114; $8000.

**Corona, L. I., N. Y.;** M. Fedale, 33 E. Jackson avenue; one-story garage, 15x40; $2000.

**Forest Hills, L. I., N. Y.;** Continental Avenue Garage Co.; one-story garage, 50x185; $20,000.

**Huntington, L. I., N. Y.;** W. H. Flessel; two-story garage, 52x100; $10,000.

**Long Island City, L. I., N. Y.;** Neptune Meter Co.; two-story garage, 25x50; $5000.

**New York, N. Y.;** Willoughby Garage Corporation, 26 Court street, Brooklyn; two-story public garage, 92x154; $100,000.

**New York, N. Y.;** Non-Column Garage Construction Co., Edgewater, N. J.; garage building; $25,000.

**New York, N. Y.;** C. F. Williams; six-story garage, 50x100; $50,000.

**New York, N. Y.;** Joseph Odierno, 255 152nd street; one-story garage, 54x125; $5000.

**New York, N. Y.;** Hugh McLeron; one-story garage, 100x100; $5000.

**New York, N. Y.;** Charles Hensle, Riverside Drive and 134th street; one-story garage, 50x200; $150,000.

**New York, N. Y.;** Daniel J. Goodwin, 332 E. 35th street; one-story garage, 75x100; $40,000.

**New York, N. Y.;** Robert Ferguson; one-story garage, 50x200; $20,000.

**New York, N. Y.;** M. Couley, 21 Broome street; one-story garage, 126x100; at 3-11 Mangin street.

**New York, N. Y.;** Builders' Land Development Co.; one-story garage, 50x100; at 323-25 W. 96th street.

**New York, N. Y.;** Daniel P. Ingram; one-story garage, 58x99; $8000. Lessee, John McAvoy, 313 E. 127th street.

**New York, N. Y.;** Alfred B. Meyer, 11 W. 81st street; one-story garage, 129x150; $40,000.

**New York, N. Y.;** trustees of Louise Schultz, care Carl R. and Carl W. Schultz, 404 First avenue; one-story garage, 20x58; $4000.

**New York, N. Y.;** Emelia L. Ben Mayhonn, 17 E. 37th street; six-story garage, 50x50; $100,000.

**New York, N. Y.;** Barry Brothers, 2804 Third avenue; two-story garage, 75x90; $35,000.

**New York, N. Y.;** Empire Trust Co., 120 Broadway; four-story garage, 54x94; $75,000.

**New York, N. Y.;** Charles Schmals, 604 Water street; one-story garage; $2000.

**Rochester, N. Y.;** John Wallace, 244 Caledonia avenue; one-story garage, 19x85; $1500.

**Schenevus, N. Y.;** Chase & Tillapaugh, one-story show room and service station, 38x100; $6000.

**Yonkers, N. Y.;** Aaron Weinberg, 481 E. 141st street; one-story garage, 16x68; $5000.

**Yonkers, N. Y.;** City of New York; 1½-story garage, 51x33; $3000.

**Bucyrus, O.;** Carroll estate; two-story garage and sales room, 42x72; $9000.

**Cincinnati, O.;** Albert Bohnstengel, 259 Helen street; one-story private garage, 18x20; $12,000.

**Cincinnati, O.;** Walter H. Geir; one-story private garage, 21x53; $3000.

**Cincinnati, O.;** E. C. Kuhn, 8 W. Fourth street; one-story private garage, 20x20; $1500.

**Circleville, O.;** James I. Smith; two-story private garage, 20x30; $2000.

**Cleveland, O.;** Gordon Square Garage Co.; one-story garage, 100x110.

**Cleveland, O.;** John Rice; one-story public garage, 50x100; $8000.

**Cleveland, O.;** A. B. Smythe, 200 Erie building; one-story commercial garage, 95x150; $35,000.

**Cleveland, O.;** Masters & Mullen Construction Co., 601 Electric building; one-story garage, 50x100; $10,000.

**Cleveland, O.;** M. J. Mandelzweig, 5705 Hawthorne avenue; one-story private garage, 36x48; $4000.

**Cleveland, O.;** Larmage Co.; one-story garage, 97x115.

**Toledo, O.;** D. M. Kable, 2427 Lawrence avenue; three-story garage and sales room, 76x120; $40,000.

**Ada, Okla.;** Bobbitt & Sparks Co.; one-story brick garage and sales room, 50x140; concrete floors.

**Carmen, Okla.;** Carmen Auto Co.; fireproof garage, 75x140; install complete garage equipment; $10,000.

**Frederick, Okla.;** O. L. Phipps; two-story garage, 50x150; $25,000.

**Oklahoma City, Okla.;** Gross Construction Co.; three-story brick and concrete garage; $40,000. Lessee, Stapleton Motor Car Co.

**Okmulgee, Okla.;** R. Gill Co.; one-story garage, 80x100.

**Ponca City, Okla.;** E. W. Marland; one-story garage, 100x100; $25,000.

**Tulsa, Okla.;** Tulsa Automobile Corporation; two-story auto service station; fireproof; 135x110.

**Portland, Ore.;** Talbot & Casey, Grand avenue and E. Ankeny street; one-story garage, 90x100; $20,000.

**Allentown, Pa.;** L. S. Jacoby, 510 Hamilton street; two-story private garage, 27x30; $3000.

**Berwick, Pa.;** Joel Morton Estate, care Thomas Morton, Hotel Morton; two-story public garage, 70x115; $20,000.

**Bethlehem, Pa.;** Meyer Beiberger Co., 67 E. Geepp street; four-story garage, 41x67; $20,000.

**Bloomsburg, Pa.;** F. P. Edwards, 150 W. Main street; two-story public garage, 50x150; $25,000.

**Bridgeport, Pa.;** James Loos Sons Co.; one-story garage, 28x100; $5000.

**Easton, Pa.;** Lewis Mattes, 423 Centre street; one-story public garage, 40x60; $5000.

**Eddystone, Pa.;** Baldwin Locomotive Works, 500 N. Broad street, Philadelphia; one-story garage, 30x40.

**Harrisburg, Pa.;** Harrisburg Automobile Co.; one-story garage, 210x100.

**Harrisburg, Pa.;** Henry Cladter, 302 Market street; one-story garage, 100x164; $15,000.

**Harrisburg, Pa.;** H. M. Cohen, 117 S. Third street; three-story public garage, 80x69; $20,000.

**Harrisburg, Pa.;** Isaac Freedman, 805 James street; one-story garage; $3500.

**Latrobe, Pa.;** Keystone Motor Co.; one-story commercial garage; $8500.

**Merion, Pa.;** Warren C. Graham; 1½-story garage, 18x16.

**Philadelphia, Pa.;** Martin P. Maxwell, 2022 Aranungo avenue; one-story garage, 34x37; $3000.

**Philadelphia, Pa.;** Robert Gray and James Thoburn, 2636 N. Lawrence street; one-story garage, 40x219; $18,000.

**Philadelphia, Pa.;** William Wallace; one and two-story garage, 107x84; at 58th and Larchwood avenues.

**Philadelphia, Pa.;** Berman Bros., 6019 Market street; one-story public garage, 120x112; $10,000.

**Philadelphia, Pa.;** Joseph Hyman, 2859 Tulip street; one-story garage and storage station, 120x204; $7000.

**Philadelphia, Pa.;** Mrs. T. Titman, 519 Moore street; one-story public garage, 50x54.

**Philadelphia, Pa.;** S. H. Davies, S. E. corner 10th and Tioga streets; one-story garage, show room and repair shop, 70x40; $6000.

**Pittsburgh, Pa.;** Abraham Rasner, 903 Mellon avenue; one-story private garage, 14x20; $1500.

**Pittsburgh, Pa.;** Hamilton Motor Car Co.; Fifth avenue and St. James street; one-story garage; $20,000.

**Reading, Pa.;** Fritz Ehream, 922 Penn street; one-story public garage, 50x80; $6000.

**Reading, Pa.;** M. H. Early; one-story garage, rear 147 S. Sixth street; $1500.

**Royersford, Pa.;** Yelles C. Freed; one-story garage, 24x20.

**Scranton, Pa.;** Pennsylvania Central Brewing Co., 431 N. Seventh avenue; one-story private garage, 75x100; $10,000.

**Steelton, Pa.;** Galt Muff; one-story garage, 189x100; at Front and Chestnut streets.

**Uniontown, Pa.;** Brownfield Coal and Coke Co., care John H. Harman, First National Bank building; two-story garage, 31x34; $6000.

**Uniontown, Pa.;** Reisinger Motor Co.; one-story commercial garage, 60x128; $10,000.

**Williamsport, Pa.;** W. V. Mussinn; one-story public garage, 84x140; $20,000.

**Pawtucket, R. I.;** Joseph Cullen, Broadway and Blackstone street; one-story garage, 70x100.

**Providence, R. I.;** Antonio Abouzzese; one-story public garage, 38x65; $4000.

**Woonsocket, R. I.;** Arthur Decelles, 350 Clinton street; one-story garage, 80x100, with wing 20x30, at Pond and Social streets; $12,000.

**Sioux Falls, S. D.;** A. G. Brooks; one-story public garage, 44x150.

**Memphis, Tenn.;** H. T. Bruce; one-story brick and stone service station, two rooms; $10,000. Also battery service station, one-story brick, two rooms; $5000.

**Dallas, Tex.;** King Motor Co.; one-story brick garage, 75x170; $20,000.

**Hillsboro, Tex.;** Grimes Garage and Machine Shop, 108 N. Waco street; three-story fireproof garage, 50x100; install necessary equipment; $15,000.

**Marfa, Tex.;** Alamo Lumber Co.; reinforced concrete and tile garage, 125x50; cement floors; $5000.

**Port Arthur, Tex.;** Port Arthur Auto Sales Co.; one-story garage; $16,000.

**Port Arthur, Tex.;** T. E. Linn; Proctor and Atlanta streets; one-story garage; $22,000.

**Bellows Falls, Vt.;** F. J. DeForge; two-story garage, 58x120; at Williams and Rockingham streets.

**Lynchburg, Va.;** Apperson Lee Motor Co., care Garnett Lee, 10th and Church streets; one-story public garage, 64x125; $25,000.

**Richmond, Va.;** Charles Gunst, Virginia apartments; one-story public garage, 74x42; $20,000.

**Richmond, Va.;** Max E. Ruehrmund; one-story brick garage; $3000.

**Richmond, Va.;** Grover C. Dula; two story garage, site 100x130; at Broad and Shafer streets.

**Spokane, Wash.;** Culton-Moylan-Reilly Auto Co.; one-story garage at 924 Second avenue; $8500.

**Hillsboro, Wis.;** M. O. Lind; one-story garage, 45x120; $8000.

**Milwaukee, Wis.;** John J. Suminski, 328 Brady street; one-story garage, 46x85; $8000.

**Milwaukee, Wis.;** Mrs. Block, S. E. corner Second and Centre streets; one-story garage, 18x30; $1200.

**Milwaukee, Wis.;** Henry Voelz, 86 Michigan street; one-story garage, 22x50; $2000.

**Milwaukee, Wis.;** Frank J. Harder, 612 Greenfield avenue; one-story garage, 49x18; $1000.

**Milwaukee, Wis.;** Adolph Lipman, 3124 State street; one-story garage, 22x24; $1244.

**Milwaukee, Wis.;** J. H. Rotier, Goldsmith building; one-story garage, 62x149; $15,000.

**Milwaukee, Wis.;** Scranton Stockdale, 3520 Grand avenue; one-story private garage, 20x30.

**Milwaukee, Wis.;** A. V. Englehardt, 917 Chestnut street; one-story garage, 20x20; $1000.

**Milwaukee, Wis.;** H. V. Miller, M. & M. Bank building; one-story garage 65x120.

**Milwaukee, Wis.;** Mrs. A. E. O'Neil, 585 Summit avenue; one-story garage, 13x24; $2000.

## Garage Additions, Remodeling and Alterations.

**Decatur, Ill.;** J. C. Sweeney and E. A. Mehl have opened an automobile repair shop at 252 E. Main street.

**Luray, Kan.;** John Knapp is building an addition to his blacksmith shop, which will be used for an automobile repair shop.

**Grand Rapids, Mich.;** W. D. Vandecar will remodel and build an addition to his building, including the addition of a second floor at the front and the broadening of the sales rooms.

**Owosso, Mich.;** The Auto Sales Co. has remodeled the display room. They are dealers in Dodge Brothers cars.

**Liberty, Mo.;** R. L. Raymond is remodeling his garage.

**New York, N. Y.;** Alterations on the two-story building at 242 West 69th street for garage purposes is one of the first projects to be altered according to the rules recently adopted by the Board of Standards and Appeals, therefore less cost is anticipated.

**Windsor, O.;** F. F. Butcher is building and equipping an addition to his garage to be used as a business office and accessories department.

**Xenia, O.;** W. C. Sutton and Roy Sutton are remodeling the George Little building at the corner of Main and Whiteman streets, into a garage. The concern will be known as the Sutton Auto Sales Co.

# GARAGE CONTRACTS RECENTLY AWARDED

## General Constructions and Service Stations Erected Far and Wide in a Season of Heavy Demand for Storage Space

**Gadsden, Ala.;** Kyle Real Estate and Building Co.; one-story brick garage, 50x125; concrete floors and gravel roof.

**Montgomery, Ala.;** Robert D. Maxwell Co., Birmingham, Ala.; one-story garage, 65x150; $11,000.

**Malvern, Ark.;** Malvern Hardware Co.; one-story brick garage, 50x150; $10,000.

**Denver, Col.;** Henry Samson, 1620 S. Logan street; one-story garage, 50x125; for Tom Botterill; $10,000.

**Denver, Col.;** Fleming Brothers, First and Broadway; one-story garage, 50x150; for A. W. Kendrick; $23,000.

**Denver, Col.;** F. A. Kellner, 655 E. Ellsworth avenue; one-story garage, 50x70; for G. W. Brown, 2433 14th street; $4000.

**Denver, Col.;** E. J. Reynolds, 743 Fox street; one-story garage, 30x34; for W. A. Snyder, 1338 High street; $2000.

**Bridgeport, Conn.;** John H. Leonard Co., 902 Chapel street; one-story garage, 100x68x116; for Geometric Tool Co., Blake and Valley streets; $14,000.

**New Haven, Conn.;** Ralph Prete, 263 Wooster street; one-story garage, 49x52x40; for C. P. Judge, 39 Church street; $4000.

**Washington, D. C.;** William Selby Co.; two-story garage, 85x74; for Margaret E. Kennelly, 1226 15th street; $5000.

**Chicago, Ill.;** Scully Steel and Iron Works, 208 S. La Salle street; one-story garage, 100x40; $15,000.

**Chicago, Ill.;** J. A. Sloan, 1001 W. 68th street; one-story garage, 55x75; $3000.

**East Chicago, Ill.;** John H. McClay, Hammond, Ind.; one-story garage, 39x100; for Peter Skapish; $5000.

**Peoria, Ill.;** John Voss & Son, 109 W. High street; one-story private garage, 23x38; for W. S. Miles, 375 Moss avenue; $2000.

**Peoria, Ill.;** W. M. Allen Son & Co. 929 Jefferson building; one-story private garage, 30x125; for Wilson Grocery Co., 800 S. Washington street; $6000.

**East Chicago, Ind.;** J. H. McClay, Hammond, Ind.; one-story garage, 38x100; for Peter Skofish; $6500.

**Indianapolis, Ind.;** C. C. Urban, 456 Berwick avenue; one-story private garage, 15x131; for Dr. L. T. Leach, 1507 N. Meridian street; $3100.

**Jasonville, Ind.;** William Anderson, Linton, Ind.; one-story public garage, 71x102; for Alfred Williams; $8000.

**Wichita, Kan.;** Goodin Motor Co., 238 S. Market street; one-story garage, 50x150; $10,000.

**Wichita, Kan.;** Fred C. Connor, 121 N. Market street; one-story garage, 50x140; $15,000.

**Louisville, Ky.;** Frey Plaining Mill; two-story brick auto salesroom, 32x110; cement floors; for Matt O. Doherty; $9000.

**Portland, Me.;** Louis Serota, 14 Oxford street; two-story public garage, 45x100; $8000.

**Baltimore, Md.;** Consolidated Engineering Co.; Calvert building; one-story public garage, 57x95; for D. B. Martin Co., S. W. corner Wilkens avenue and Brunswick street; $6000.

**Baltimore, Md.;** G. Walter Tovel, 406 McCulloh street; one-story private garage, 24x31; for I. Oppenheimer, Coca-Cola building; $3000.

**Baltimore, Md.;** P. J. Cushen, 217 St. Paul street; garage in 2700 block Greenmount avenue, 150x250; for Tourist Garage.

**Baltimore, Md.;** Herberts & Prodehl, Munsey building; one-story garage and warehouse for William C. Robinson Sons Co., 32 South street; $5000.

**Worcester, Mass.;** R. P. Keefe, 104 Woodland street; one-story private garage, 121x65; for Graton & Knight Manufacturing Co., 344 Franklin street; $12,000.

**Detroit, Mich.;** Superior Sand and Gravel Co., 726 Dime Bank building; one-story garage, 64x80; $12,000.

**Detroit, Mich.;** William Drehl Sons Co., 74 Grandy avenue; two-story garage, 25x56; for Rosebud Creamery, 256 Grandy avenue; $4000.

**Lapeer, Mich.;** Charles Hubbard; one-story garage, 40x67; for Dennis Miller; $4000.

**Minneapolis, Minn.;** R. Billingsley Co., 547 Plymouth building; 1½-story private garage, 22x27; for Frank Baughton; $3000.

**Joplin, Mo.;** Roy Hoffman; two-story garage for A. A. Swan; $12,000.

**St. Louis, Mo.;** Arthur J. Hess, 3508 Connecticut street; one-story auto sales room and repair shop, 75x154; for Ford Motor Car Co., Sarah and Forest Park boulevard; $35,000.

**Lincoln, Neb.;** Olson Construction Co., 312 Little building; one-story garage, 50x142; for E. A. Levi, 1727 D street; $5000.

**Omaha, Neb.;** Selma Realty and Construction Co., 228-229 City National Bank building; one-story garage, 50x142; $10,000.

**Laconia, N. H.;** Frederick Morrill; one-story public garage, 140x50 and 90x50; for Benjamin Piscopo; $12,000.

**Bridgeton, N. J.;** Grosscup & Sons; one-story garage, 24x36; $2000.

**Camden, N. J.;** Harry Van Sant, Collingswood, N. J.; one-story garage, 11x20; for W. L. Sweeten, 625 Penn street, Camden; $20,000.

**Newark, N. J.;** Mrs. C. E. Henry Stengel; one-story concrete block garage at 107 Lincoln Park; $1500.

**Newark, N. J.;** Paul Perrotty; one-story brick garage at 86 Jefferson street; $1000.

**Newark, N. J.;** Charles Schneider; one-story hollow tile garage at 133 Magazine street; $1000.

**Newark, N. J.;** Harry Brenner; one-story brick garage at 130 Oliver street; $3000.

**Newark, N. J.;** George Varley & Son, 31 Hudson street; two-story private garage, 23x32; for William E. Smith; $6000.

**Newark, N. J.;** Louis Gadwin; one-story concrete block garage at 452-54 Summer avenue; $5000.

**Newark, N. J.;** Morris Stranch; one-story brick garage at 102-04 Charlton street; $2500.

**Newark, N. J.;** William L. Blanchard; one-story brick garage at Sherman avenue and Alpine street; $10,000.

**Newark, N. J.;** Frank J. Bock; one-story frame garage at 46 Weequahic avenue; $1000.

**Newark, N. J.;** Max T. Graft; one-story concrete garage at 152-54 Hillside avenue; $1500.

**Newark, N. J.;** Hyman Breen and Hyman Mendler; one-story brick garage at 38-40 Dayton street; $1000.

**Newark, N. J.;** William E. Smith; two-story brick garage at 323-27 Highland avenue; $7000.

**Newark, N. J.;** Kruvant-Mayzel Co.; one-story brick garage at 292-300 Garside street; $12,000.

**Newark, N. J.;** Gannaro Caracino; one-story brick garage at 256 Belmont avenue; $1500.

**Trenton, N. J.;** Edward LaRue, 535 Hermitage avenue; one-story public garage, 18x120; $4000.

**Trenton, N. J.;** Carl Poinsett, 37 Maple avenue; one-story garage, 20x30; for N. A. K. Bugbee, 209 E. Hanover, $4000.

**Yonkers, N. Y.;** Louis Johnson, 261 McLean avenue; one-story public garage, 36x50; for George B. Foster, 298 S. Broadway; $7000.

**Hope, N. D.;** Meinecke Building Co., Fargo, N. D.; one-story garage for Fuller Land Co.; $8000.

**Cincinnati, O.;** William Miller, 2023 Elm street; one-story private garage, 27x31; for Mrs. George B. Cox, Brookline and Jefferson avenues.

**Cincinnati, O.;** Lionel Kugeman, 2344 Ohio avenue; one-story private garage, 21x53; for Walter H. Giur; $2200.

**Cleveland, O.;** Frank Lukas, 5733 Broadway; two-story garage, 45x130; for Frank J. Scohoda, 3308 E. 55th street; $20,000.

**Cleveland, O.;** Masters & Mullen Construction Co., 601 Electric building; two-story garage, sales room and service station, 108x220; for J. A. Wigmore & Co., 1330 Williamson building; $125,000.

**Holgate, O.;** Hess & Son; one-story garage and sales room, 44x130; for Rothenberger Brothers, Napoleon, O.; $10,000.

**Urbana, O.;** Patrick Hetherman; one-story commercial garage, 50x100; for B. F. Ganson; $8000.

**Bartlesville, Okla.;** M. E. Graybell; one-story garage for C. E. Burlingame; $20,000.

**Oklahoma City, Okla.;** McCleland-Gentry Motor Co.; one-story fireproof garage; $60,000.

**Oklahoma City, Okla.;** G. W. Barnett; two-story brick and concrete garage; $6000.

**Oklahoma City, Okla.;** Cabell & Price; three-story brick and concrete garage; $45,000.

**Oklahoma City, Okla.;** Gross Construction Co.; three-story brick and concrete garage; $40,000.

**Bethlehem, Pa.;** Kehoe & Mowery Co.; one-story garage, 40x18; for Robert G. Mohr, 19 N. Linden street; $2500.

**Harrisburg, Pa.;** J. Frank Saussaman, 1713 North street; two-story private garage, 26x28; for Harrisburg General Hospital, Front and Mulberry streets; $3500.

**Norristown, Pa.;** H. P. Friend, Boyer arcade; one-story private garage, 50x80; for Countie's Gas and Electric Co., 212 De Kalb street; $6000.

**Philadelphia, Pa.;** H. P. Friend, Boyer arcade, Norristown, Pa.; one-story private garage, 64x100; for General Manufacturing Co.; 30th and Market streets, Philadelphia; $6000.

**Philadelphia, Pa.;** Dominick Ero, 519 Christian street; one-story garage, 20x36; for Angel De Poppe, Ninth and South streets; $2500.

**Philadelphia, Pa.;** Joseph R. Smith; five-story garage, 169.9 by irregular depth; on Diamond street, between Sedgley avenue and the Pennsylvania railroad; $18,600.

**Philadelphia, Pa.;** E. A. Conwell; one-story brick garage, 92x24; southwest corner Delaware and Weccacoe avenues; for Brown Manufacturing Co.; $2000.

**Philadelphia, Pa.;** J. Shenkeman; eight brick garages, each 14x20; rear 608 to 622 Northeast boulevard; $1280.

**Philadelphia, Pa.;** H. Brocklehurst; two-story brick garage, 60x17, with one-story rear building, 60x167; west side Germantown avenue, north of Luzerne street; for J. J. Felin & Co., Inc.; $18,000.

**Philadelphia, Pa.;** Moss & Taylor; two-story and mansard garage, 50x75; northeast corner 64th street and Lebanon avenue; for Louis Jones, Jr.; $4000.

**Philadelphia, Pa.;** Robert Killough; two two-story stone garages, each 19.9x22.6;

northwest side Arbutus street, west of Phil-Ellena street; $2500.

**Philadelphia, Pa.;** E. C. Durell; one-story brick garage, 48x175; at 5134 Ridge avenue; $8000.

**Philadelphia, Pa.;** Charles Johnson; one-story stone garage, 22x22; at 723 West Clivenden avenue; for John A. Seeds; $950.

**Philadelphia, Pa.;** Joshua M. Holmes; two one-story brick garages, each 12x18; at 1103 and 1105 Wingohocking street; $1000.

**Philadelphia, Pa.;** Joshua M. Holmes; one-story brick garage, 14x16, at 1115 Wingohocking street; $500.

**Philadelphia, Pa.;** M. Silberman; one-story brick garage, 17.10x45; south side Thorp's lane, east of Wister stret; $800.

**Philadelphia, Pa.;** L. Davis; one-story brick garage, 12x20; northeast corner Wayne avenue and Penn street; for G. Schaal; $900.

**Philadelphia, Pa.;** J. J. Hurley & Co.; seven brick garages, each 11x16; north side Green lane, west Boone street; for F. P. Thomas; $1575.

**Philadelphia, Pa.;** Edward B. Martin; one-story brick garage, 14.6x22; east side Darien street, north of Bristol street; for W. Walton; $600.

**Philadelphia, Pa.;** Milton W. Young, Overbrook; one-story garage, 15x23; for Mrs. S. D. Casanave, 6401 Drexel road; $2000.

**Philadelphia, Pa.;** Charles Knabb, 2145 E. Letterly street; two-story garage, 31x20; $3000.

**Philadelphia, Pa.;** Morris Yellin; two-story brick garage and storage station, 30x72.10; at 3605 Smedley street; for William J. Dooley; $5500.

**Philadelphia, Pa.;** M. Moister & Co.; iron on iron frame garage, 16.4x28.6; north side Sedgley avenue, west of 70th street; for H. C. Harding Co., Inc.; $500.

**Philadelphia, Pa.;** G. H. Steinle; one-story stone garage, 20x40; with rear building, 12x7; at 3435 Bowman street; for George Kindon; $1450.

**Philadelphia, Pa.;** John W. Dougherty; one-story brick garage, 43x48; at 4829 Brown street; $4000.

**Philadelphia, Pa.; E. H. Apsley; one-**story brick garage, 17x147; south side Baltimore avenue, west of 53rd street; $3000.

**Philadelphia, Pa.;** Philip Robin; six brick garages, each 12x20; north side Widener place, west of 15th street; for D. Coffman; $1500.

**Philadelphia, Pa.;** Philip Haibach Contracting Co.; one-story brick garage, 28.2x42.2; at 2003 Cambridge street; for G. A. Muller; $2800.

**Philadelphia, Pa.;** C. West & Co.; one-story brick garage, 10x17; at 1217 Wakeling street; $500.

**Philadelphia, Pa.;** L. Davis; one-story brick garage, 12x18; west side Woodstock street, south of Chelten avenue; for Dr. J. M. Cunningham; $600.

**Philadelphia, Pa.;** John F. Holland; one-story brick garage, 108x34; southwest corner Whitby avenue and 53rd street; $4000.

**Philadelphia, Pa.;** C. M. Swartley; one-story brick garage, 12x22; at 218 Rochelle avenue; for Harry Henderson; $550.

**Philadelphia, Pa.;** Wayne Junction Metal Cornice Co.; one-story brick and iron garage, 8.8x60; at 506 Race street; for A. Hartung & Co.; $1400.

**Philadelphia, Pa.;** J. D. Fisher; one-story brick garage, 98x215; southwest corner of 46th and Ludlow streets; for J. G. Lucas; $29,000.

**Philadelphia, Pa.;** Barnes Brothers; one-story brick garage, 40x84; with rear building, 56x127.6; at 737 Frankford avenue; for R. Gray and J. Choburn; $15,000.

**Philadelphia, Pa.;** Berman Brothers; one-story brick garage, 120x112; north side Cedar avenue, west of 61st street; $25,000.

**Philadelphia, Pa.;** Thomas J. Hamilton; one-story brick garage, 18x17; rear 4223 Lancaster avenue; for William Madway; $500.

**Philadelphia, Pa.;** J. S. Silver; one-story brick garage, 16x20; rear 3002 Frankford avenue; for J. Rosenblum; $800.

**Heavy Traction Feats, Motor Truck Long Distance Expresses and Increasing Utilitarian Uses of Automobiles Are New Conditions in the Trade Brought About by Railroad Congestion and the War. The Illustration Shows the Hauling of a 71-Foot Bridge Girder by an F. W. D. Four-Wheeled Three-Ton Truck in Milwaukee, Wis., the Entire Load Weighing 22 Tons.**

**Philadelphia, Pa.;** John D. Fisher; one-story garage, 98x214.6; at northwest corner Chestnut and 46th streets; $26,228.

**Philadelphia, Pa.;** Martin P. Newell; one-story brick garage, 30.10x127; with wing, 9x12; at 3008-12 Tulip street; $3000.

**Philadelphia, Pa.;** John P. Fallon; one-story brick garage, 16x21; southeast corner 60th and Ludlow streets; for Frank O. Bisler; $1100.

**Philadelphia, Pa.;** Frank I. Wintz; one-story brick garage, 34x72; at 1136-38 Vine street; for Franz L. Brehm; $4765.

**Philadelphia, Pa.;** H. Brockelhurst, 512 W. Norris street; two-story garage, 60x17 and 60x167; for J. J. Felin & Co., Inc., 4142 Germantown avenue; $18,000.

**Philadelphia, Pa.;** Edward B. Miller; one-story brick garage, 14.6x22; at 4331 North Darien street; for F. T. Mann; $600.

**Philadelphia, Pa.;** H. Hope; one-story brick garage, 12x20; at 6403 North 11th street; for Helen Luckman; $500.

**Philadelphia, Pa.;** H. Hope; one-story stone and brick garage, 14.6x19.6; at 6500 North Eighth street; for Kathryn Petzold; $500.

**Philadelphia, Pa.;** Augustus Hartman; two-story fireproof garage and service station, 84x100; at 3017-23 North Broad street; for Charles Shivery.

**Pittsburgh, Pa.;** A. Heh, 6318 Stanton avenue; one-story private garage, 12x18; for A. J. Brown, 196 Mayflower street; $3300.

**Wilmerding, Pa.;** Wilmerding Supply Co., Caldwell and Pitcairn streets; two-story garage, 24x36; for James M. Ament, Westinghouse and Annio streets; $1500.

**Charleston, S. C.;** D. C. L. Hiers, Walterboro, S. C.; automobile building, 50x115; for Overland-Palmetto Co., Walterboro; $8000.

**Aberdeen, S. D.;** E. W. Johnson, 1011 N. Lincoln street; one-story public garage, 42x100; for Charles Wright, 102 Sixth avenue; $4000.

**Sioux Falls, S. D.;** Collins Brothers, Minnesota Realty building; two-story public garage, 44x88; for Hahn & Jonas, 316 S. Phillips avenue.

**Sioux Falls, S. D.;** Collins Brothers, Minnesota Realty building; 2½-story public garage, 50x150; for C. W. Thompson, 315 W. Ninth street.

**Memphis, Tenn.;** J. E. Faires, Builders' Exchange; fireproof automobile accessory building, 50x76; stone with tile roof; for J. P. J. Pruce & Co., Inc., Union and Dunlap streets; install vulcanizer, gasoline and oil pumps, storage equipment, motor air compressors; $20,000.

**Fort Worth, Tex.;** W. D. Reynolds; three-story concrete, steel and brick automobile building, 75x105; elevators; for Hubb-Diggs Automobile Co.

**Appleton, Wis.;** George Bodway, 764 May street; one-story private garage, 27x29; for John Haug, 690 Lincoln avenue; $2000.

**Lake Mills, Wis.;** Hunzicker Construction Co.; one-story garage, 66x132; for Lake Mills Auto Co.; $10,000.

**Milwaukee, Wis.;** Frank Kempinski, 1336 Eighth avenue; one-story garage, 20x30; for Frank Faulkner, 382 33rd street; $1500.

**Milwaukee, Wis.;** J. J. Jaeger, 1147 Scott street; one-story garage, 43x20; for Dr. N. J. Walk, 1130 National avenue; $1100.

**Neillsville, Wis.;** Krasin Brothers, Marshfield, Wis.; one-story garage, 50x100; for Knorr & Ranoch, Granton, Wis.; $8000.

**Pine Lake, Wis.;** A. Cull, Hartland, Wis.; one-story private garage, 40x40; for George J. Meyer; $3000.

**West Bend, Wis.;** Wollner & Wockerchen; one-story garage, 50x90; $8000.

## Contemplated Garage and Storage Enterprises

**Greenville, Col.;** J. H. Dunham, owner of the Dunham Garage, is contemplating the erection of a mammoth garage and service station on Martin street.

**Chicago, Ill.;** Gamble, Gladstone Hotel, will have a one-story brick garage erected on 138th street to cost $42,500.

**Chicago, Ill.;** Robb Motor Co., 2801 Sheffield avenue, will have a garage erected at 2808-10 Sheffield avenue. It will be a three-story brick and will cost $76,000.

**Brooklyn, N. Y.;** C. and J. Building Co., 1268 39th stret, will erect 10 one-story garages, 17 by 16 feet, at a cost of $5000.

**Brooklyn, N. Y.;** I. Gottleib. 54 S. Second street, will erect a one-story brick garage, 62 by 100 feet, on North Fourth street, to cost $10,000.

**Brooklyn, N. Y.;** Johnson Construction Co., 71st and 10th avenue, will erect 16 one-story brick garages to cost $3000. They will be located on 79th street and Fifth avenue.

**Brooklyn, N. Y.;** A. King, West street, will have a one-story brick garage, 132 by 121 feet, erected on Flushing avenue, corner of Waverly avenue, to cost $30,000.

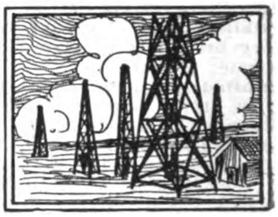
**Brooklyn, N. Y.;** The Willoughby Garage Co., 260 Broadway, will have a new one-story brick garage, 100 by 200 feet, to be erected on Nostrand avenue, at the corner of Willoughby avenue, to cost $45,000.

**New York, N. Y.;** The H. D. Best Co., 52 Vandervild avenue, has contracted for a three-story combination stable and garage to be erected on the north side of 119th stret, east of Pleasant avenue, for the Standard Oil Co. The building will cost $100,000.

**Syracuse, N. Y.;** Jacob Dold Packing Co. will erect a $15,000 brick garage at 229 Walton street. It will be one of the most costly garages to be built.

**Philadelphia, Pa.;** M. T. Lucas plans to build a garage to cost about $26,000.

# *Securities and General Materials Markets*



## *Automobile Securities Quotations*

| | Oct. 11 | | Nov. 8 | |
|---|---|---|---|---|
| | Bid | Asked | Bid | Asked |
| Ajax Rubber Co | 59 | 62 | 50 | 51 |
| J. I. Case T. M. Co., pfd | 80 | 82 | 82 | .. |
| Chalmers Motor Co., com | 2 | 5 | 2 | 4 |
| Chalmers Motor Co., pfd | .. | .. | .. | .. |
| Chandler Motor Co | .. | .. | 57½ | 60 |
| Chevrolet Motor Co | 76 | 79 | 63 | 10 |
| Fisher Body Corp., com | 25 | 35 | 23 | 30 |
| Fisher Body Corp., pfd | 86 | 87½ | 70 | 73 |
| Fisk Rubber Co., com | 60 | 65 | 50 | 60 |
| Fisk Rubber Co., 1st pfd | 102 | 105 | 100 | 105 |
| Fisk Rubber Co., 2nd pfd | 90 | 95 | 85 | 90 |
| Firestone Tire and Rubber Co., com | 106 | 110 | 98 | 101 |
| Firestone Tire and Rubber Co., pfd | 100 | 103 | 98 | 101 |
| General Motors Co., com | 94¼ | 94¾ | 85 | 85¾ |
| General Motors Co., pfd | 77¼ | 78¾ | 73¼ | 75 |
| B. F. Goodrich Co., com | 42½ | 44 | 35½ | 36½ |
| B. F. Goodrich Co., pfd | 100 | 102 | 98¾ | 99 |
| Goodyear Tire and Rubber Co., com | 174 | 176 | 145 | 150 |
| Goodyear Tire and Rubber Co., pfd | 100 | 102 | 98 | 100 |
| Grant Motor Car Corp | 2 | 4 | 2 | 4 |
| Hupp Motor Car Corp | 2½ | 3½ | 2⅛ | 2½ |
| Hupp Motor Car Corp | 82 | 88 | 82 | 88 |
| International Motor Co., com | 8 | 12 | 8 | 11 |
| International Motor Co., 1st pfd | 20 | 40 | .. | 50 |
| International Motor Co., 2nd pfd | .. | .. | 15 | 30 |
| Kelly-Springfield Tire Co., com | 41 | 43 | 38¼ | 40 |
| Kelly-Springfield Tire Co., pfd | 85 | 90⅛ | 80 | 85 |
| Lee Rubber and Tire Corp | 17 | 18 | 14 | 14¼ |
| Maxwell Motor Co., Inc., com | 32⅝ | 34½ | 21 | 22 |
| Maxwell Motor Co., Inc., 1st pfd | 65 | 67 | 54 | 56 |
| Maxwell Motor Co., Inc., 2nd pfd | 19¼ | 20 | 13⅛ | 14 |
| Miller Rubber Co., com | 170 | 175 | 120 | 125 |
| Miller Rubber Co., pfd | 100 | 102 | 98 | 101 |
| Packard Motor Car Co., com | 143 | 148 | 120 | 130 |
| Packard Motor Car Co., pfd | 94 | 98 | 94 | 97 |
| Paige-Detroit Motor Car Co | 22 | 25 | 19 | 21 |
| Peerless Truck and Motor Corp | 7 | 13 | 9 | 11 |
| Portage Rubber Co., com | 122 | 125 | 115 | 120 |
| Regal Motor Car Co., pfd | 15 | 20 | 10 | 20 |
| Reo Motor Car Co | 24 | 25¼ | 19 | 20 |
| Saxon Motor Car Corp | 12 | 13 | .. | 6¼ |
| Springfield Body Corp., com | .. | .. | .. | .. |
| Springfield Body Corp., pfd | .. | .. | .. | .. |
| Standard Motor Construction Co | 9 | 10 | 8 | 9 |
| Stewart-Warner Speed. Corp | 62½ | 63½ | 49 | 50 |
| Studebaker Corp., com | 33½ | 34½ | 35⅜ | 35½ |
| Studebaker Corp., pfd | .. | 90 | 84 | 86 |
| Swinehart Tire and Rubber Co | 40 | 45 | .. | 40 |
| United Motors Corp | 21½ | 22 | 17⅛ | 17⅛ |
| U. S. Rubber Co., com | 57¼ | 58 | 52 | 52½ |
| U. S. Rubber Co., pfd | 101½ | 102 | 96 | 99 |
| White Motor Co | 41 | 42 | 34⅜ | 34½ |
| Willys-Overland Co., com | 24⅞ | 25 | 17⅞ | 18 |
| Willys-Overland Co., pfd | 87¼ | 94 | 74 | 75 |

## *General Market Prices*

| | Oct. 10 | Nov. 12 |
|---|---|---|
| Iron, foundry, S., ton | 50.00 | .... |
| Iron, foundry, N., ton | 47.00 | .... |
| Steel, Bessemer, ton | 60.00 | 47.50 |
| Iron, Bessemer, ton | 54.00 | .... |
| Copper, electric, 100 lbs | 23.50 | 23.50 |
| Copper, lake, 100 lbs | .... | .... |
| Lead, 100 lbs | 8 | 6¼ |
| Tin, 100 lbs | 58½ | .... |
| Petroleum, Kan., cr., bbl | 2.00 | 2.00 |
| Petroleum, Pa., cr., bbl | 3.50 | 3.50 |
| Linseed oil, raw | 1.16 | 1.15 |
| Lard oil, prime | .... | 2.10 |
| Fish oil, Menhaden, br | 92 | 92 |
| Sulphuric acid, 60 | .... | 1.50 |
| Cottonseed oil, bbl | 19.00 | 19.00 |
| Silk, raw, Italy | .... | .... |
| Silk, raw, Japan | 6.60 | 6.00 |
| Rubber, fine, up-river, Para | 69½ | 61 |
| Tire, scrap | 6¼ | 5½ |
| Steel, open hearth, ton | 60.00 | 47.50 |

### DOMESTIC CRUDE OIL PRICES.

The prices of crude petroleum at the wells during the middle of the month of November were:

| | | | |
|---|---|---|---|
| Pennsylvania dark | $3.50 | Corsicana light | $1.90 |
| Mercer black | 2.22 | Corsicana heavy | 1.05 |
| Cabell | 2.57 | Electra | 2.00 |
| New Castle | 2.10 | Henrietta | 2.00 |
| Corning | 2.60 | Caddo, La., 38° | 2.00 |
| Wooster | 2.38 | Caddo, La., heavy | 1.00 |
| North Lima | 2.08 | Healdton | 1.20 |
| South Lima | 2.08 | Moran | 2.00 |
| Indiana | 1.98 | Strawn | 2.00 |
| Princeton | 2.12 | De Soto | 1.90 |
| Somerset 32° | 2.40 | Thrall | 2.00 |
| Ragland | 1.10 | Crichton | 1.50 |
| Illinois above 30° | 2.12 | Canada | 2.48 |
| Kan. & Okla | 2.00 | Humble | 1.00 |
| Plymouth | 2.03 | Cal., 37 grav | 1.32 |

**Naphtha.**

| | 10-gal. drums | |
|---|---|---|
| | Under 100 cases | 100 cases and over |
| Benzine, 59-62° | 38 | 37½ |
| Stove | 38¼ | 37¾ |
| Auto, 68-72° | 43¾ | 43¼ |
| Naphtha, 73-76 | 47¾ | 47¼ |

| | In cans and cases | | |
|---|---|---|---|
| | Under 100 | 100-199 | 200-299 |
| Benzine, 59-62° | 33¼ | 33¼ | 33¾ |
| 73 a 76° | 43 | 42¼ | 42½ |
| Stove | 33¾ | 33¼ | 33 |
| Auto, 68-72° | 39 | 38¾ | 38½ |

### NEW YORK CITY PRICES.

New York City prices for petroleum and its products were:

**Petroleum.**

| | | | |
|---|---|---|---|
| Crude, barrels, a gallon | 15a14 | Fuel, 31° | 11 |
| Refined barrels | 12 | Fuel, 34° | 11½ |
| Tank wagons delivery | 9 | | |

**Naphtha.**

| | | | |
|---|---|---|---|
| Garages | 24 | V. M. & P. deod., in steel | 23 |
| Consumers | 26 | V. M. & P. deod., in wood | 26 |

**Gasoline.**

| | | | |
|---|---|---|---|
| Gas machine, steel | 41 | 68-72° steel | 32 |
| 72-76° | 38 | 68-72° wood | 28 |
| 72-76° wood | 38 | | |

## *Foreign Trade Opportunities*

(Address Bureau of Foreign and Domestic Commerce, Washington, D. C., Giving Number, Which Will Forward Correspondence, Unless Otherwise Stated.)

25,659—A commission merchant in India wishes to be placed in communication with American manufacturers and exporters of iron and steel products, galvanized sheets, hardware, such as shovel handles, files, saws, augers, furniture and building materials, etc., all kinds of wire and wire goods, nails, tubes, lathes, shaftings, locks, metal sheets, antimony, electric and gas lampware, glass and enamelware, stationery, piece goods, paints and colors, automobiles, machinery, chemicals and drugs, typewriters, oils, umbrellas and accessories, laces and ribbons and other lines. References.

25,700—A firm in Cuba desires to represent American manufacturers and exporters of silver plated hollow ware, cheap lines of silver deposit on glass and china, bicycles, tricycles and miniature automobiles for children. References.

25,726—A company in Italy desires to secure an agency for the sale of gas and oil motors, steam turbines, boilers, steam motors for industrial and agricultural purposes, pumps and accessories, electrical apparatus, telephones, dynamos, electric motors, lamps, accumulators, measuring instruments, safety appliances, agricultural machinery, machine tools for working metals, wood and marble, heating and sanitary apparatus, refrigerating machinery, plumbing supplies, laundry machinery, machinery for the manufacture of cement, iron and steel beams, hollow poles, ornamental castings, iron doors, rotating doors and blinds, concrete molds and concrete mixing machinery, winches, hoisting machinery and elevators. Cash or credit terms will be arranged to cover each transaction. Correspondence may be in English. References.

# *Legal Information Upon Outlawed Debts That Are Owing to You*

Probably every reader hereof, except perhaps somebody fortunate enough to have always sold for cash, has debts which are more than six years old, and which are outlawed under the laws of practically all states. A debt once outlawed cannot be collected, as long as the debtor is shrewd enough not to revive it. If it is revived it can be collected just as if it were not more than six years old.

Generally speaking, there are two ways of reviving an outlawed debt. One is by paying part of it, even though a very small part. A man who has owed $500 more than six years and who pays even a dollar on it after the six years have run, revives the whole debt, and if he is financially responsible, it can be collected from him.

The other way of reviving a debt more than six years old is by having the debtor clearly acknowledge it and promise to pay it.

If you can get an outlawed debtor to do either of these two things you can get your money, provided he has it to pay.

Sometimes a debtor will revive an outlawed debt ignorantly, without meaning to, therefore I have seen many creditors shrewdly manipulate things so the debtor would say or do something that would revive the debt, so it could be collected.

An interesting case has just been decided by a State Appeal Court. In Pittsburgh, Pa., two men were in partnership as retail grocers. They did a large business, and bought largely, particularly from a New York jobbing house, to which in time they owed $5000. The jobbing house tried to collect, but could get only promises. Finally without paying anything, the retail firm were sold out by their landlord for unpaid rent. They did not go into bankruptcy.

This was in 1909. Several years later, in 1912, one of the partners of the defunct firm went into another business, and became prosperous. The New York jobbing house one day sent a representative to him to see if he could not collect something on the old $5000 debt, which remember was not yet outlawed. The debtor remembered the debt, acknowledged that he owned it and promised to pay "as soon as I get the money." And he went further. He offered the jobber's representative $50 on account, which, however, was refused on the ground that it was too picayune as a payment on a $5000 debt. All this was in the presence of two witnesses.

**ARE you in need of legal advice? Do you want first class professional service at no cost to yourself? If so, address a letter to Mr. Buckley, in care of the Legal Department of the Accessory and Garage Journal, detailing your troubles as clearly as possible. He will give immediate answer, either on this page, for the benefit of other subscribers who may have the same trouble, or direct by mail, as the inquirer specifies. The writer should sign his full name and address, but only initials or a pseudonym will be published in these columns. The service is free to subscribers to this magazine.**

Nothing happened until 1916, when the former partner who had offered the $50 died without having paid anything. The jobber presented the whole claim of $5000, with interest, against his estate, and collected it, on the ground that the debt had been revived by the debtor's offer to pay $50 on account within the six years. This the lower court upheld, the case was appealed and the Appeal Court has now upheld the verdict in a decision which I will discuss in a moment.

There are two phases of the revival of a debt. Let me illustrate them both:

First—A man contracts a debt on Jan. 1, 1910. If nothing is done about it until Jan. 1, 1916, the debt is outlawed, because the six years statute of limitation has expired. After that, however, it can be revived in either of the two ways I have described. And it makes no difference how old it is, either, if the debtor revives it as I have explained.

Second—A man contracts a debt on Jan. 1, 1910. I have already explained how the debt would automatically outlaw itself on Jan. 1, 1916, if nothing was done about it before. But suppose the debtor in June, 1913, acknowledges that he owes the debt and promises to pay it within a reasonable time, or better still, makes a partial payment on it. The debt will not now be outlawed until June 1, 1919, for what the debtor did in June, 1913, gave the six-year period of outlawry a new beginning. If he had acknowledged the debt or made the payment in September, 1915, it would not then have been outlawed until September, 1921.

The case I have described belonged to the second class. The debt was incurred in 1908, but was acknowledged and partial payment offered in 1912, which then became the new beginning for the outlawry period. Therefore, the debt would not have been outlawed until 1918, and the claim against the dead partner's estate was in time in 1916.

With all this the court agreed, and it would be so ruled, I think, everywhere. I quote this from the court's decision:

"A clean, distinct and unequivocal acknowledgment of a debt or an existing obligation, such as is consistent with a promise to pay, is sufficient to toll the statute (revive the debt and start a new period of outlawry). There must, however, be no uncertainty either in the acknowledgment or in the identification of the debt. The acknowledgment must be plainly referable to the very debt upon which the action is based, and must also be consistent with a promise to pay on demand and not accompanied by other expressions indicating a mere willingness to pay at a future time. A mere declaration of an intention to pay is not equivalent to a promise to pay. The acknowledgment must be such as indicates an intention to pay the debt existing at the time of the acknowledgment. The time of payment need not be immediate, but the intention to pay must be present."

In another case a debtor said, speaking of an outlawed debt: "I will pay you all I owe you and if I can do anything for you before that time I will do so, you need not trouble yourself about me that I will not pay you, for I expect to pay all I owe." The court said this wasn't such an acknowledgment and promise as would revive the debt; it was not sufficiently specific or definite.

In another case the debtor said, in a letter inclosing $50 on account: "I do not know of my own knowledge what I owe you, but I have no doubt you have it correct. I'll send you some from time to time as I can until it is paid." The court said this was a good promise, and revived the debt.

(Copyright, November, 1917, by Elton J. Buckley.)

## CASTLE & KYTE OPEN BRANCHES.

Castle & Kyte, 872 Woodward avenue, Detroit, exclusive sales representatives for the Hayes wire wheel, have opened over 500 branches in leading cities throughout the country. The agency in Philadelphia recently added is Brown-White, Inc., 2222 Chestnut street.

# AGENCIES RECENTLY APPOINTED.

## Add to and Correct Your Mailing List of Pleasure Car and Other Dealers—Symbol * Indicates Commercial Vehicle. † Electric Vehicle.

### ARKANSAS.

**Little Rock**—Ford, Freeman & Freeman, 209-211 West Third St.
*Ford, Freeman & Freeman, 209-211 West Third St.
Ford Tractor, Freeman & Freeman, 209-211 West Third St.
**Pine Bluff**—Overland, Oilar Overland Co., 112 Main St.
Willys-Knight, Oilar Overland Co., 112 Main St.

### ARIZONA.

**Douglas**—KisselKar, Ross & Cunnick.
**Prescott**—King, The Pine Garage Co.

### CALIFORNIA.

**Exeter**—KisselKar, H. C. Baalam.
**Fullerton**—KisselKar, A. F. Oswald.
**Los Gatos**—Buick, Los Atlos Garage.
Overland, R. F. Meredith.
**Lompoc**—KisselKar, Charles Rudolph.
**Pasadena**—King, Miller & Price.

### COLORADO.

**Boulder**—KisselKar, H. Lawrence.
**Broomfield**—KisselKar, Harry J. Madson.
**Denver**—Olympian, The Houghton MacRae Motor Co., 1341-43 Broadway.
**Ft. Collins**—KisselKar, J. F. Vanderwark.

### CONNECTICUT.

**Bridgeport**—Peerless "8," The Reo Garage Co.
**Hartford**—Haynes, F. W. Dart.
Hupmobile, The Universal Auto Co., 132 Allyn St.
*Roamer, Ralph D. Britton.
**New Haven**—Mitchell, J. W. Gogarn & Co.
Peerless, The White Motors Co.

### DELAWARE.

**Wilmington**—Haynes, The Taylor Motor Sales Co., Fifth and Orange Sts.

### ILLINOIS.

**Chicago**—Dort, The Louis Geyler Co.
Ford, The Boedeker Siegfried Motor Co., Kennedy building.
Olympian, Thomas F. Dempsey.
*Indiana, John Kramer, 1526 Wabash avenue.
**Dixon**—Haynes, C. E. Mossholder, Morrison building.
Velie, C. E. Mossholder, Morrison building.
**Greenville**—Kissel, Jack Moore (King & Moore).
*Kissel, Jack Moore (King & Moore).
**Springfield**—Ford, Charles Washburn, W. N. Essle building.

### IOWA.

**Des Moines**—Lexington, The Halpenny Auto Co.
**Cedar Rapids**—Cole, The Midwest Motor Co., 116-18-20 S. Seventh St.
**Ft. Dodge**—Elgin, The Hanson-Tyler Co.
**Milo**—Willys-Overland, I. E. Cunningham.
**Ottumwa**—Nash, J. E. Scase and F. M. McHenry, 23 S. Green St.
**Sigourney**—Willys-Overland, John Mitts.
**Waterloo**—Lexington, A. E. Baum & Co.

### KENTUCKY.

**Ashland**—King, Manley & Barney.

### LOUISIANA.

**Crowley**—KisselKar, E. F. Lovell.
**New Orleans**—McFarlan Six, Herbert J. Hirsch, 949 Baronne St.

### MARYLAND.

**Baltimore**—*Sullivan, V. O. Parsons.

### MASSACHUSETTS.

**Boston**—Elcar, The King Motors, Inc., 650 Beacon St.
*Phenix, G. W. McBride.
**Worcester**—Elgin, Bryant G. Smith & Sons.

### MICHIGAN.

**Detroit**—Davis, F. C. Coffmann, 732 Woodward Ave.
**Flint**—Olympian, The Schreader Automobile Co.
**Green Bay**—Nash, Green Bay Nash Co., 408-10 N. Adams St.
**Jackson**—Jackson, John Mark and Claude Gildersleeve.
**Muskegon**—Overland, Muskegon Overland Co.
Willys-Knight, Muskegon Overland Co.
*Federal, Muskegon Overland Co.
**Marquette**—Dort, The City Garage, Lincoln St.
Paige, The City Garage, Lincoln St.
Studebaker, The City Garage, Lincoln St.
**Manistee**—Oakland, The Manistee Tire and Repair Co., Washington St. and Fifth Ave.
*Buick, The Manistee Tire and Repair Co., Washington St. and Fifth Ave.
**Saginaw**—Overland, Saginaw Overland Co.
**St. Joseph**—King, Thomas B. Emery, 204 Main St.
**Three Rivers**—Maxwell, Noel Foster.

### MINNESOTA.

**Faribault**—Overland, Irving & Kleim Motor Co.
**Springfield**—*Republic, The Gifford Motor Car Co.

### MISSOURI.

**St. Louis**—Monroe, C. & H. Automobile Co., 4160 Olive St.
Roamer, C. & H. Automobile Co., 4160 Olive St.

### NEW HAMPSHIRE.

**Fitchburg**—Chevrolet, Henry Bolduc, 304 Kimball St.

### NEBRASKA.

**Fremont**—Paige, The Krohm Automobile Co.
**Kearney**—Grant, Charles L. Snider.
**O'Neil**—Ford, Jess Mellor.

### NEW JERSEY.

**Hackensack**—Mitchell, Van Dusen's Garage.
**Morristown**—Nash, A. Wiss & Brother.
**Newark**—Nash, The Neuton-Humphreyville Co.
*Koehler, Hoagland & Thayer, Inc.

### NEW YORK.

**Auburn**—*Nash, The Auburn Motors Co.
**Elmira**—Nash, The La France Garage Co.
*Nash, The La France Garage Co.
**Hoosick Falls**—Mitchell, W. S. Gibbs.
**Ithaca**—Nash, H. W. Dean.
**New York**—Chevrolet, The Van Dyke Auto Co., Inc., 1627 Broadway.
Cole, The Royal Garage and Machine Works.
Standard "8," the Taylor Motors Corp., 1920 Broadway.
*Koehler, Nickerson & Schroeder.
**Syracuse**—Dodge Brothers, C. F. Gilmour, Inc.

### NORTH DAKOTA.

**Kenmare**—Dodge Brothers, Kenmare Auto Co.

### OHIO.

**Akron**—*Autocar, The R. H. Noah, 34-38 North Broadway.
**Circleville**—Mitchell, J. V. Wilson.
**Elyria**—King, The Elyria Garage Co.
**Philipsburg**—*Koehler, A. Labock.
**Sigourney**—Overland, John Mitts.
Willys-Overland, John Mitts.

### OKLAHOMA.

**Chariton**—Overland, The Chariton Auto Co.
Willys-Knight, The Chariton Auto Co.
**Holdenville**—Dort, The Holdenville Motor Co.
**Hobart**—Chalmers, A. E. Deaver.
**Oklahoma City**—Grant Six, The Westcott Motor Co., 117-19 West Second St.

### PENNSYLVANIA.

**Jeannette**—KisselKar, G. A. Myers.
**Johnston**—KisselKar, McCain & Kesselring.
**New Castle**—Mitchell, The South Street Garage.
**Philadelphia**—Murray, J. J. Kane, Jr., 5 North 21st St.
Olympian, The American Sales Co., 1356 Girard Ave.

### SOUTH DAKOTA.

**Sioux Falls**—Ford, The W. H. Coon Auto Co., 11th and 12th Sts.
KisselKar, The Mannix Motor Co., 124 N. Main Ave.
Westcott, W. R. Bentson and Henry Hanson.

### TEXAS.

**Amarillo**—KisselKar, Morris Jounenat.
**Dallas**—Apperson, J. F. Roark, M. Boyd Reith and C. B. Jackson.
*Truxton, J. F. Roark, M. Boyd Reith and C. B. Jackson.
**Ft. Worth**—*Koehler, The Texas Implement and Carriage Co.
Olympian, The Mitchell Automobile Co.

### VIRGINIA.

**Norfolk**—*Koehler, The King Sales Co., 723 Granby St.

### WASHINGTON.

**Snohomish**—KisselKar, Snohomish Auto Co.
**Spokane**—Stutz, Farndam Bros. Motor Car Co., 1312 First Ave.
**Stoughton**—Maxwell, Claire Bickley.
**Tacoma**—Paige, Paige-Saxon Motor Co.
Saxon, Paige-Saxon Motor Co.

### WISCONSIN.

**Ashland**—Buick, White & McDonell Co.
**Cashton**—KisselKar, Max Bros.
**Cedarburg**—Nash, William Roebke.
*Nash, William Roebke.
**Greenville**—Dodge Brothers, Greenville Motor Co.
**Milwaukee**—Empire, William Upham, 415 Marshall St.
**Mineral Point**—KisselKar, The Auto Inn Motor Co.

### WYOMING.

**Riverton**—KisselKar, G. H. Moreau.

# ORDNANCE AND AIR SERVICE CORPS

## Many Skilled Workers Are Needed to Enlist for Duty in the Great Army Behind the Army

The Enlisted Ordnance Corps, National Army, into which the Ordnance Enlisted Reserve Corps has been merged, is charged with the supply, maintenance and repair of all cannon and artillery vehicles and equipment; all machines for the service and manouver of artillery; all small arms, ammunition, harness, motor trucks, motorcycle, tractors and railroad cars; in fact, it is the army behind the army, commonly known as "Service of the Rear."

There is a place for practically every man who knows a trade in the Enlisted Ordnance Corps. Machinists, mechanics, plumbers, painters, carpenters, canvas workers, auto mechanics, saddlers, blacksmiths and wheelwrights are especially needed at this time.

Applicants must be between 18 and 40 years, citizens or declarants, and be able to speak, read and write the English language, should have no absolute dependents, and must be able to pass a physical examination conforming to that prescribed for the regular army.

### HOW TO ENLIST.

**Get application blank by writing to Chief of Ordnance, Enlisted Personnel Division, Washington, D. C. Fill it out, return to Chief of Ordnance, and if there is an opening for you at the time, authorization will be sent you to enlist at the nearest recruiting station, and if accepted there, free transportaton will be provided to place of service.**

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There are many vacancies for non-commissioned officers in the air service of the United States Army which afford excellent opportunities for skilled workers to get a practical education in aeronautics, including work on airplane motors, trucks, airdrome construction and other. Squadrons of these men are now being formed for service in Europe. The service calls for the following kinds of skilled workers: Chauffeurs, auto mechanicians, auto engine repair men, office clerks, carpenters, radio operators, electricians, instrument repair men, cooks, coppersmiths, armorers, machine gun repair men, sail makers, photographers, machinists, blacksmiths, motorcycle repair men, stenographers, cabinet makers, mechanical draftsmen, magneto repair men, metal workers, engine testers, rope riggers, propeller makers, propeller riggers, telephone linesmen, tool makers, vulcanizers, welders, lithographers, packers, telephone operators, motorcyclists, plumbers, painters, tailors, gas works employees, buglers, moulders, pattern makers, telephone adjusters, barbers, truck masters, brick layers, cobblers, propeller testers, boat makers, saddlers.

Applicants must be physically sound, white, and from 18 to 40 years of age. Upon application to Volunteer Bureau, 119 D street, Washington, D. C., a blank and information will be sent to the applicant.

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### THIRTIETH BATTALION GAS AND FLAME ORGANIZING.

An opportunity has been afforded to enlist for pioneer soldier service of high character, as result of the formation of the Thirtieth Engineers, Gas and Flame Battalion, at Camp American University, Washington, D. C. It is being recruited from the ranks of such civil professions and trades as chemical and mechanical engineering, explosive and gas manufacture, plumbing and carpentry and similar trades and exceptionally high grade of trained talent is volunteering. A number of recent recruits have come directly into the battalion from the Panama Canal Service. The organization is in charge of Maj. E. J. Atkinson, Corps of Engineers, formerly superintendent of locks of the Panama Canal.

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### THE TORBENSEN GOLD BOND GUARANTEE.

The Torbensen Axle Co., Cleveland, O., has issued a neat little booklet entitled, "The Gold Bond Guarantee of Torbensen Internal Gear Truck Drive," which explains the Torbensen axle and the guarantee that goes with it. The company guarantees for the life of the truck, while it is in its original owner's hands, the I beam and spindles in the Torbensen axle against breakage unless caused by accident, and guarantees the internal gears against breakage or undue wear for a period of two years from the time the bond is dated. The idea of the Gold Bond Guarantee, which is signed by the treasurer and president of the company, is to assure owners of 100 per cent. service on Torbensen axles.

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### FORD WILL CONTINUE MANUFACTURE OF PASSENGER CARS.

The rumor that was quite widely circulated through the press to the effect that Henry Ford would stop manufacturing passenger cars proved without foundation. Ernest Liebold, secretary of Mr. Ford, denied the rumor for the Ford company, saying:

"We have no intention of stopping the manufacture of pleasure cars. This is the business upon which we were founded. If the war eventually demands that all automobile factories be converted into munition manufacturing plants, then Mr. Ford, as in the past, stands ready and willing to give way without a protest. I think the war eventually will require a closer mobilization of America's resources."

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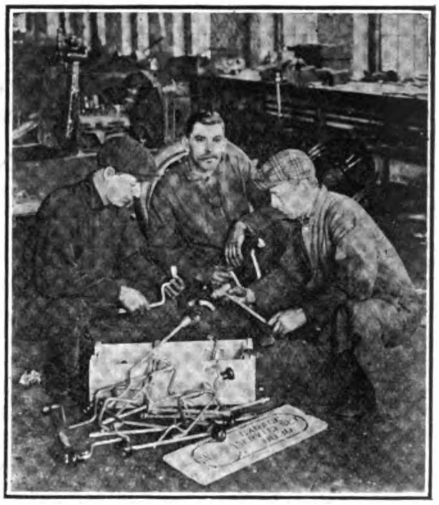
### WALDEN-WORCESTER WRENCHES.

Every repair man or garage doing general repair work requires a great variety of wrenches. In every car there are nuts and bolts in inaccessible places where only socket wrenches can be used. For this purpose Walden-Worcester, Inc., of Worcester, Mass., have made up a set which they designate as No. 30, consisting of 30 wrenches of various types and sizes.

Some of the 30 wrenches have more than one sized socket, so that the total number of actual wrenches is 39, consisting of the following: 13 sizes of offsets, 10 speed wrenches, six L wrenches, five specially designed wrenches, three demountable rim wrenches and two tee handles.

There are no two of the same size of wrench from the same type of handle, all wrenches being chosen to fit the popular makes of automobiles, including such places where a specially designed wrench is necessary.



Garage Service Wrench Set, Made by Walden-Worcester, Inc., Worcester, Mass.

The full set, which should be of interest to every garage man who is planning automobile overhauling business for the winter months, sells for but $20.

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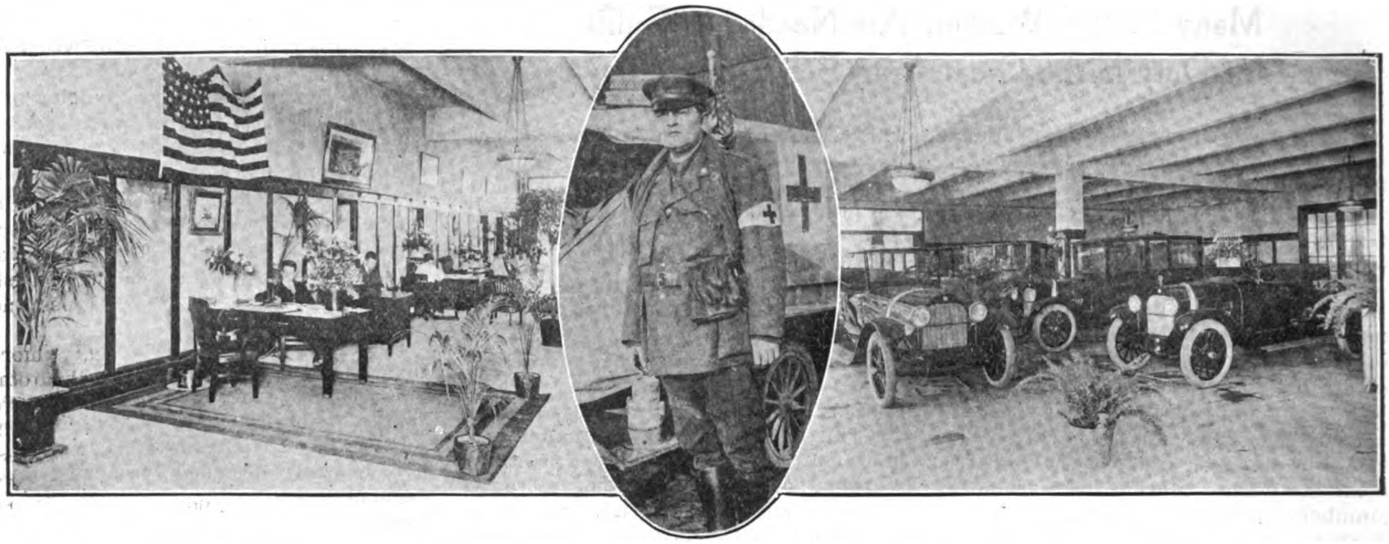
### BEAVER TOOLS 1918 CATALOGUE DISTRIBUTED.

The Borden Co., Warren, O., are distributing their 1918 catalogue of "Beaver" easy working die stocks and square end pipe cutters. Several new "Beaver" tools are shown for the first time in this catalogue, one of the most popular of these being the new No. 3 "Beaver" junior ratchet die stock, which is built on the unit plan to thread pipe from ⅛ to 1 inch inclusive.

The catalogue will be sent to those interested in "Beaver" tools if they will address the company.

# *Rapid Development of a Big Car Agency*



**Interior View on the Left: Salesroom of the H. Barcroft White Corporation, Syracuse, N. Y., Distributors of the Nash Passenger Cars and Trucks, and the Chevrolet Car in Central New York. Centre: H. Barcroft White, President of the Corporation, Who Built the First American Ambulances Used in France. Right: Show Room of Record Business Built Up in Less Than a Year.**

AUTOMOBILE dealers survive the storm of trade and prosper in proportion to the energies they devote to their business. A good business policy to start with and one that is strictly adhered to is another important factor in maintaining a business and keeping it progressive. Establishing a large and successful automobile agency is usually the result of years of experience, but there are many instances in the trade where men of exceptional acumen and good business knowledge have instituted prosperous dealerships in a few months time by detecting the policies of successful firms and applying them with judgment. Probably of the many notable examples of this kind none are so striking in their various respects as that of the H. Barcroft White Corporation of Syracuse, N. Y., established this spring by the man whose name it bears, and H. J. Dickman. These men were not strangers in the automobile business, having been dealers in Paris for 10 years, coming to this country when war conditions made business unprofitable in France. In a territory strange to them, however, inside of a year they have built up one of the biggest agencies in the country in Nash and Chevrolet cars.

The success of the company is not attributable in any respect to radical ideas or spectacular methods, but to a thoroughly sound business plan, which includes a well appointed sales room and service station, efficient and satisfactory service to patrons and timely and judicious advertising. Every facility is at hand for carrying on and promoting the business and the personnel of the sales, repair and service departments in the organization is of the highest type.

A most modern type of building is used by the company, situated in a very advantageous location at a corner of intersecting streets. The front part, devoted entirely to the sales department for new cars, is excellently designed for its purpose, having a glass front on both streets and at the corner section, which is squared off, only three brick columns breaking up the view into the rooms and these support the roof structure and form the entrances. The rear section, also well lighted, is used as a used car department and repair and service station.

The appointments of the sales room are very inviting, the walls being panelled half way to the ceiling in dark finish with light panelling. A cheerful atmosphere is obtained through the liberal use of appropriate and artistic pictures, potted plants, rugs and high grade furniture. At night the whole room can be flooded with a bright illumination from electroliers suspended from the centres of the panels formed by the overhead beams, which are enclosed in concrete.

With ideal working facilities and an excellent operating organization, the company was well equipped to develop the large volume of business that has been accomplished in Nash and Chevrolet cars in the past year, but there were other factors that entered into its success and the most important of which, and the one that special emphasis was placed upon by Mr. White was the fair treatment and attention paid customers, or the service rendered. A satisfied customer usually brings several more, and this policy bore fruit with the company. In addition to the regular Nash and Chevrolet warranties, which, of course, are backed by the makers of those companies, the H. Barcroft White Corporation formulated its own retail service policy to maintain agreeable relations with its customers and to afford them all the possible service that a dealer can render on a business basis. This retail service policy, which, of course, applies to new motor cars, is as follows:

H. Barcroft White service has been organized for the purpose of assisting our patrons to keep their motor cars in good repair and adjustment.

H. Barcroft White service includes the following:

1. We will make all necessary adjustments for one month after delivery of the motor car, providing it is brought to our service department for that purpose and has not been tampered with or injured through accident or neglect. After that time all work will be done in a careful and workmanlike manner at our regular charge for such work, except as noted in clause two.

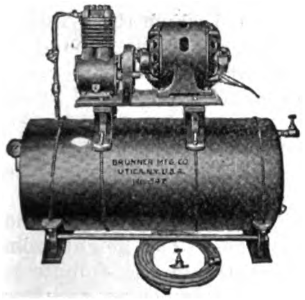
2. We will install at our service station without expense to an owner either for parts, labor or transportation, any parts that may be replaced as defective by the motor car manufacturer or ourselves under the warranty printed below for a period of 90 days after delivery of the motor car to the purchaser.

3. All gratis work under the manufacturer's warranty is to be done at our service station and in the event an owner requests warranty work to be done a distance from our station, the expenses of the workmen for transportation, board and lodging, if any, will be charged to the customer.

4. If, at the time the warranty work is being done, we are called upon to do ordinary repair work which does not come under the warranty, the labor and material for such work will be charged at our regular rates.

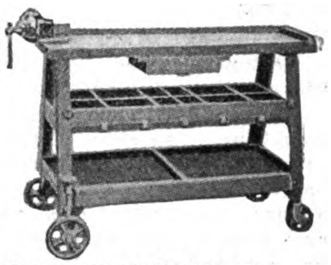
5. It is understood that the inspections and instructions concerning the operation and care of motor vehicles, though made by our employees, are, in fact, made in behalf of the owner, and that the inspector or instructor is acting for him. The owner, therefore, waives all claims arising out of any fault or omission in connection therewith.

6. It is our intention to give each and every purchaser fair and business like treatment. Should any patron not receive it we ask in good faith to be so advised.



Brunner Air Compressor Outfit.

# GARAGE EQUIPMENT



United Engine Portable Bench.

## BEACH GRIP PULLER.

A good wheel or gear puller is as indispensable in a garage as a hammer. It may be used in a great many ways. It is practically the only tool with which a flywheel may be removed without the attendant danger of breaking the crankshaft.

The Beach automatic grip puller is of special design and extremely strong. It is so designed that when pressure is applied by turning the screw the jaws are pulled toward the common centre, thus making a positive, but automatic grip.

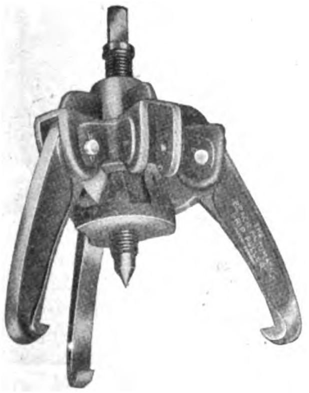
The body of the device is so designed that the jaws are removable, simply by the slipping out of the cotter pins and cross pins, thus permitting the insertion of larger or smaller jaws. With the device two sets of jaws are furnished; three 7½-inch jaws, which open to 10 inches, and three 12-inch jaws, which open to 18 inches. Either a two or three-jaw combination may be used, as there is an extra jaw socket directly opposite one of the other jaws.

**Manufactured by the Greb Co., 202 State St., Boston, Mass. Price, $20. Liberal discount to dealers and garages.**

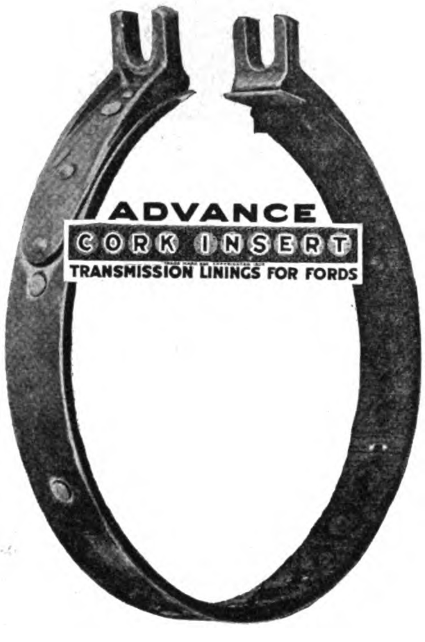
## VETERAN TRANSMISSION LINING.

The cork insert transmission lining on the Ford brake band pictured herewith is one of a set that was used for more than a year on a Ford car as the power unit to draw a trailer. This trailer was in use practically every day hauling loads which totaled as high as 2500 pounds.

As the picture shows, this lining is still in excellent condition, and probably good for thousands of miles more of hard service. The long service secured from this set of linings is attributed to the buttons of cork which are inserted in a heavy fabric. Cork is said to produce an extremely smooth friction action, and when this substance is used much of the slip and tearing action of the frictional surface is eliminated, thereby prolonging the life of the fabric.



Beach Grip Puller.



Cork has also the advantage of wearing very slowly, and as a result of this it is said by the manufacturers that cork insert transmission lining delivers a length of service which makes it decidedly economical.

**This product is manufactured by the Advance Automobile Accessories Corporation, Dept. J 3-1, 56 East Randolph St., Chicago, Ill. Price, $3 per set of three.**

## MATTHEWS ELECTRIC PLANTS.

The Matthews Electric Light and Power Plants, as the name indicates, are complete power and lighting systems, which are fully automatic or semi-automatic as desired. They are available in one, two or five K. W. capacities. The automatic plant is so designed as to be started or stopped by its own devices. As soon as the batteries have been discharged 15 per cent. of their capacity, or whenever the load, or current demand, is in excess of that which the battery should furnish, the generator starts to operate. Thus charging commences and it continues until the maximum is reached, when the generator stops.

It will readily be seen that a plant of this type will protect the battery against its own greatest dangers, viz, the point of being overdischarged, or a state of remaining discharged. The outfit is particularly useful for farm lighting and is represented in the Middle West by the Consolidated Utilities Corporation of Chicago and by the Southwest General Electric Co., with offices at Dallas, Houston, San Antonio, El Paso, Oklahoma City and Tulsa.

## PORTABLE LUBRICATING STATION.

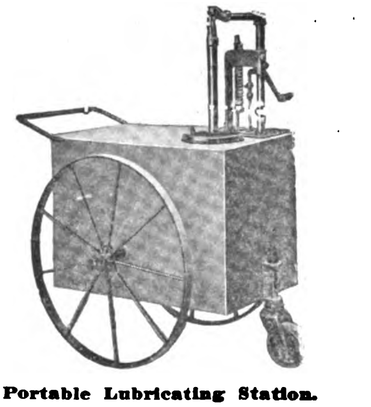
A practical portable lubricating oil service station on wheels is illustrated herewith. It is designed to facilitate the dispensing of lubricating oil. The tank, which has a capacity of 65 gallons, is made of 14-gauge blue annealed steel, with welded joints and mounted on two 30-inch steel wheels with a small wheel at the front for a guide. The pump is so designed that it discharges on one complete stroke of the plunger an accurate quart of oil. Either a pint or half pint can be pumped by a simple adjustment of the quantity lever, which is mounted at the side and easily accessible. A nickel plated anti-drip nozzle is furnished on the pump, so designed that it effectively stops the flow of oil when pumping ceases.

All of the oil is strained before passing through the pump so that clean oil is had at all times.

**Manufactured by S. F. Bowser & Co., Ft. Wayne, Ind. Write for catalogue and prices.**

## THERMOSTATIC METAL.

The development of G-E Thermostatic Metal by the General Electric Co. has put a new means for accurate control of cooling and electrical systems into the



Portable Lubricating Station.

hands of automobile and accessory manufacturers.

This metal, which consists of two strong, non-corrosive units, possessing a wide difference in coefficients of expansion, yet firmly attached to each other throughout, is so susceptible to temperature changes that a difference of one degree higher or lower is said to tend to curve or straighten always to the same extent. It may be used for temperatures as high as 500 degrees Fahrenheit.

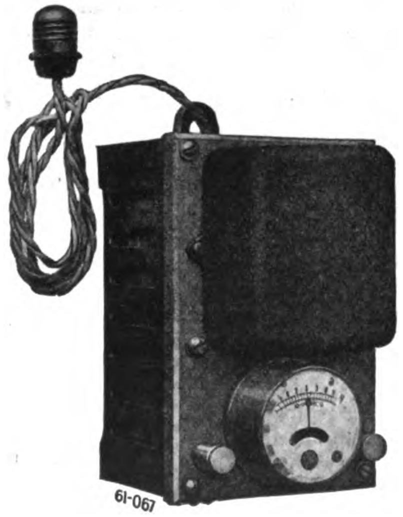
Thermostatic Metal can be cut, stamped or pressed into practically any desired shape, and when annealed will have all its original inherent qualities. The manufacturers claim that it will not deteriorate nor take permanent set under applications of heat or force within definite practical limits. It is manufactured in various standard thicknesses ranging from .25 to .015 of an inch, maximum width of six inches and maximum length of 36 inches.

Experiments indicate that a four-inch strip, 5/16 of an inch wide by .030 of an inch in thickness has a deflection of approximately .75 of an inch when heated from 76 to 212 degrees Fahrenheit, and exerts a force of about two ounces when subjected to a change of 100 degrees.

**For particulars and charts write to General Electric Co., Schenectady, N. Y.**

## THE WAGNER RECTIFIER.

Because of unusual driving conditions, the using of starter and lights for long periods, many motorists find it necessary to have the battery charged from an outside source of current from time to time.



It is not always convenient to visit a battery station and should it be necessary to leave the battery for some time the owner is often without the use of the starter and lights, or possibly even the car itself.

The Wagner rectifier is a device for home charging from alternating current and is of the well known vibrating type, simple and entirely mechanical. With it the alternating house current may be used, the battery connected and left. The manufacturers claim that with the Wagner rectifier it is impossible to connect the battery up wrongly and that once started it requires no further attention until the battery is fully charged. The device is designed to give a tapering charge so that an over charge is impossible.

NO1.
THE RHODES MFG CO
HARTFORD
CONN.

Rhodes Horizontal Shaper.

**Manufactured by Wagner Electric Manufacturing Co., St. Louis, Mo. Write for prices.**

## RHODES HORIZONTAL SHAPER.

Next to the milling machine there is no machine tool that can be used for such a variety of small work as the shaper. With this tool many small jobs, such as planing, grooving, cutting keyways, etc., can be accomplished very quickly. The Rhodes shaper illustrated is designed for small work and fitted with a sliding bed, upon which is mounted a revolving vise table. The cutting tool has a seven-inch stroke.

A particularly pleasing feature of this machine is that it may be converted into a 3½-inch vertical slotter, adjustable to 10 degrees, simply by removal of the traveling table and attachment of the vertical shaper arrangement.

The workmanship and materials entering into the construction of this machine are of the best. All parts are accurately machined and fitted.

**Manufactured by the Rhodes Manufacturing Co., Hartford, Conn. Write for descriptive literature and prices.**

## CYLINDER GRINDING MACHINE.

A cylinder regrinding machine designed for grinding gasoline engine cylinders from the smallest motorcycle type to a six-cylinder block 31½ inches long is being manufactured for use in repair shops and garages, where there is a call for repair work of this sort.

The bed and legs are of the conventional type and designed to eliminate all possible vibration. The boring spindle, which is designed for strength and rigidity, is 4¾ inches in diameter by 10½ inches long and carried upon heavy bearings.

The face plate upon which the cylinder block is mounted while being ground is large and heavy, and has both a cross and lengthwise feed, the latter being automatic. It is also fitted with two knurled nuts by which the plate may be raised and lowered, thus facilitating the centering of the cylinder.

The length of the bed is 55 inches and the width 15½ inches. The height from the bed to the centre of the spindle is 12 inches. The whole machine occupies a floor space of approximately three by five feet.

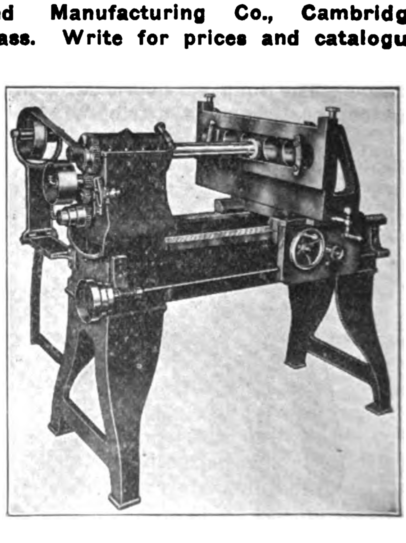
**Manufactured by the B. L. Schmidt Co., Davenport, Ia. Write for price.**

## LEVIATHAN GARAGE FUNNEL.

To meet the demand for an extra large garage funnel the Dover Leviathan Garage Funnel has been designed. This device is fitted with a chamois skin filter across the bottom, stretched tight and supported by a wire rack, which while it prevents sagging, permits a filtering surface the full size of the funnel, thus insuring a rapid flow. It is made of extra heavy steel and thoroughly galvanized after it is made up, thereby giving it a durable and rustless coating.

The funnel part is made extra large and of sufficient capacity to take a five-gallon can of gasoline at a single pouring without having to wait for the contents to run through the strainer.

**Manufactured by the Dover Stamping and Manufacturing Co., Cambridge, Mass. Write for prices and catalogue.**



Cylinder Grinding Machine.

ACCESSORIES
AND
EQUIPMENT

### THE IMPERIAL PRIMER.

Starting an engine quickly and easily in cold weather is becoming more and more of a problem, in these days of a constantly lowering grade of gasoline. The Imperial Primer is a simple, easily installed device that is operated from the cowl dash and is designed to spray a rich mixture of vaporized, fireable gasoline into the manifold, near the intake ports.

The device consists of a small, substantially made plunger pump (K) with the necessary bolts, connections and tubing for mounting upon the dash of any car. To the pump are connected two tubes L and N. The tube N is connected with a priming tank P, into which is placed high test gasoline, obtainable at practically any drug store. The pipe L connects with the intake manifold at R and M. Under ordinary conditions, three fillings of the tank are sufficient for the Winter season's usage. Though high test gasoline is recommended, lower test gasoline may be used with good results.

As the connections, L, M, N, O, and R, are made by means of compression couplings, no soldering, flaring or threading is required for attachment.

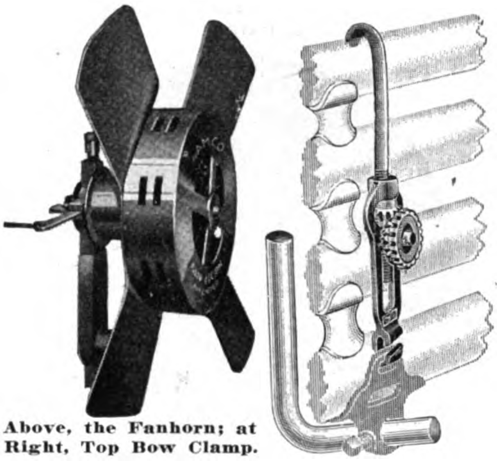
**Manufactured by The Imperial Brass Mfg. Co., 1200 West Harrison St., Chicago, Ill. Write for circular and prices.**

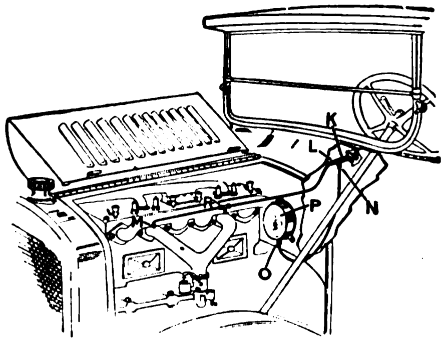
### TOP BOW CLAMP.

Every driver knows the aggravation caused by unusual knocks and noises about his car and does his best to keep them reduced to a minimum. Being subjected to so many varying stresses and strains, rattles and squeaks develop quickly, particularly where parts are subject to expansion, such as top holding straps, etc. To eliminate this trouble the Mosco Ford top bow clamp has been designed. This device hooks on to the bow brace and over the top of the bows when they are folded back. By means of a small hand wheel the tension on the bows may be increased and the bows held rigidly into place.

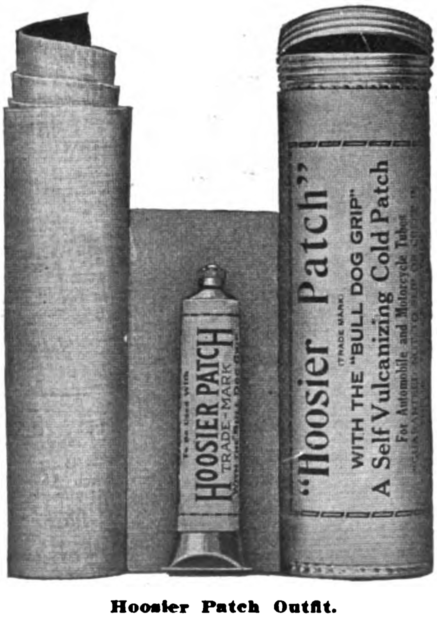
The manufacturers claim that no amount of shaking will force the holder from its grip, neither will it slip nor mar the finish of the bows.

**Manufactured by Motor Specialties Co., Waltham, Mass. Write for price and catalogue.**


Above, the Fanhorn; at Right, Top Bow Clamp.



Imperial Primer Applied.



Hoosier Patch Outfit.

### HOOSIER PATCH.

A handy repair patch is being put on the market under the name of Hoosier Patch. This article is designed to make a quick repair without the use of heat or gasoline, and the manufacturers claim that a repair made with this patch is practically permanent. They claim that the vulcanizing operation is accomplished by the heat arising from the friction of the tire when in use. With the outfit illustrated is included one patch, together with sand paper and patch solution in a self-sealing tube. In outfit No. 1 the patch contains 108 square inches; in outfit No. 2 the patch contains 54 square inches.

**Manufactured by Hoosier Rubber Manufacturing Co., Inc., Starks Bldg., Louisville, Ky. Price of outfit No. 1, $1.75; outfit No. 2, $1.**

### INDIVIDUAL MONOGRAMS.

Besides adding to the beauty and individuality of a car, a monogram is a protection, to a certain extent, against theft. Individual monograms are manufactured in many different styles and are designed for application to the car by the transfer method. They are obtained from the manufacturer on tissue paper, backed with one or two thicknesses of paper, and are applied to the car by covering the letter or monogram with a thin coating of transfer cement, applying it to the car and then removing the paper. After application the letter is varnished over.

**Manufactured by Motorists' Accessories Co., Mansfield, O. Write for descriptive booklet and prices.**

### THE FANHORN.

A unique, new device of warning signal has just been put on the market which is said to be different from every other warning. The Fanhorn, as this distinctive type of signal is known, is designed to emit tones whose volume and penetration is in direct proportion to car speed. This result is achieved by the simple expedient of making the Fanhorn a part of the engine fan. In fact, the entire device is merely substituted for the present fan on any car, with no other alterations.

The tone of the Fanhorn is best described as a cross between a whistle and a whoop, both pleasing as well as commanding, and the pitch changes with the engine or car speed. The position of this new type of signal at the extreme front of the engine compartment avoids obstructions to the sound.

The horn is worked merely by pressure upon a button, which admits air into the apertures on the fanhorn drum, setting in motion an internal, revolving slotted disc, which causes the tone.

The manufacturers guarantee the material and workmanship of the new signal for a full year, and stand back of the dealer on a broad money back if not satisfied policy.

**Manufactured by the Art Metal Manufacturing Co., Cleveland, O. Write for prices.**

### WORKRITE COMBINATION OUTFIT.

Few car owners realize the importance of their storage battery until it begins to give out. A frequent cause for battery trouble can be traced to impurities in the electrolyte, put in there from time to time as the battery is filled. The Workrite combination outfit of hydrometer and battery filler, together with receptacle for distilled water, is a very practical outfit for any owner or repair man having to do with storage battery work. The battery filler is fitted at one end with a rubber nozzle having a square shoulder, which prevents the device from rolling when placed on an inclined surface. The other end is fitted with a large bulb, which also acts as a stopper for the container bottle.

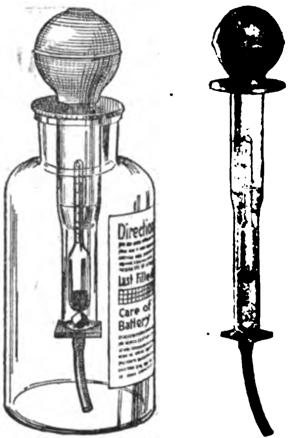
Direction for battery testing and practical suggestions for the care of the battery are printed on the label. It can be seen very readily that with ordinary care the chances of foreign matter getting into the battery electrolyte by way of the filler are small.

**Manufactured by Workrite Manufacturing Co., Cleveland, O. Price for hydrometer and filler only, $1; for combination outfit with bottle, $1.50.**

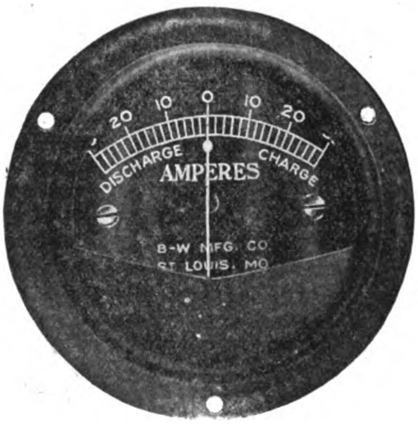
### AUTOMATIC LIGHT CONTROL.

In practically every state of the Union, there exists laws which require automobile head and tail lights to be lighted at dark, imposing fines upon those who do not comply with the law. If the automobile is parked upon the street, this means, that the owner or operator must take the time to go out and light his lights, or have them lighted. To obviate this the Semco Automatic light control has been designed. This device consists of an indicator dial which is marked with twelve numbers denoting the twelve hours, and fitted with two hands. When the operator wishes the lights lighted at a certain time, he turns the knob until the hands indicate the proper time. At the setting of the device, a plunger starts working and at the predetermined time electrical contact is made, lighting the lamps.

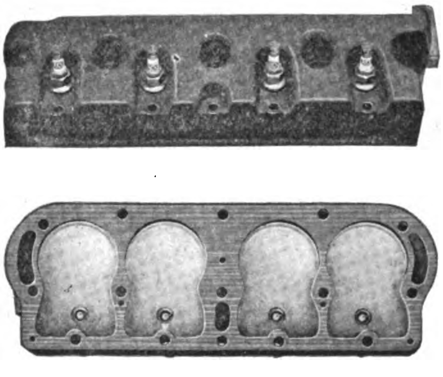
**Manufactured by the Standard Electric Mfg. Co., 846 Massachusetts Avenue, Indianapolis, Ind. Write for prices.**



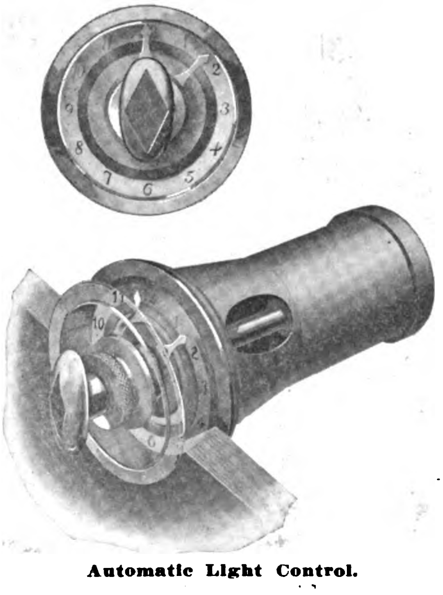
Workrite Combination Outfit.



B-W Ammeter.



Hudson Type Cylinder Head.



Automatic Light Control.

### B-W AMMETER.

Because the manufacturers of automobiles realize the importance of an ammeter in the electrical equipment, most modern machines are being fitted with such a device to indicate the passage of current to and from the battery. Many of the older machines do not have such a device, however, and, where possible, it is advisable to install one. The B-W Ammeter has a case of drawn brass, either nickeled or finished in black rubberoid. It is supplied in either surface of flush type. The glass is held in place with a special baked cement which the manufacturers claim will not crack. The movement is said to be practically vibrationless, that is, not effected by engine or rough road jars. It is of the permanent magnet iron vane type and has no moving coils or fine hair springs.

All of the parts are of relatively large dimensions. The scale is of the usual etched metal finish and several different finishes are optional.

**Manufactured by the Ballman-Whitten Manufacturing Co., 2867 Gravois Ave., St. Louis, Mo. Write for prices.**

### HUDSON TYPE CYLINDER HEAD.

A new cylinder head for Ford cars has just been put out on the market which should be an interesting fitting for Ford owners desiring to secure more speed and better combustion. This cylinder head, which may be interchanged with the standard Ford head in but a short time, is built of cast iron and constructed with an extra large water jacket holding approximately half a gallon more water than the standard head. The water jacket completely surrounds the spark plugs, thereby keeping them cool at all times. It is said that better water circulation is secured because of the increased water passage size. The largest part of the combustion chamber is directly over the valves, while the inside is perfectly smooth.

It is said that with this new cylinder head, there is a noticeable increase of power, and that there is a saving of fuel.

**Manufactured by Green Engineering Co., 34 S. St. Clair St., Dayton, O. Write for prices and literature.**

### OAKES KRANKLOCK.

This is a practical accessory for Ford cars at a low price, combining a license bracket and crank holder with a lock. It holds the license in the logical place. The plate is readily put into place and is held securely by lock washers. Extending from the top of the device are two short arms by which the crank is held rigidly, eliminating rattles and keeping it out of the dirt. Through these arms may be inserted a tumbler lock, which is provided with two keys. The device is easily installed, in a short time, strong, neat and durable, made of pressed steel and finished in black enamel.

**Manufactured by the Oakes Co., Indianapolis, Ind. Price complete with padlock, $1. Without padlock, 50 cents each.**

## VAPOGAS.

That water gas or super heated steam has a tendency to drive carbon from the explosion chamber of a gasoline engine has been demonstrated by many experimenters. If the steam is in a super heated condition the results are much better than with simply hot water.

The Vapogas system is designed to supply superheated steam to the intake manifold in such proportions as have been shown by experiment to be most efficient. It is so arranged that the correct proportion of steam and oxygen is automatically fed into the manifold at all engine speeds.

Warm vapor is taken from the radiator through the overflow pipe and drawn into a vacuum cylinder, where it is super heated into hot steam. This steam is mixed with oxygen coming through another inlet, and the mixture drawn into the manifold. Any excess moisture is taken care of by special valves. The vacuum is maintained by a check valve arrangement.

**Manufactured by the Steel Products Co., Rice Lake, Wis. Write for prices.**

## PERFECTION 5-IN-ONE VITALIZER.

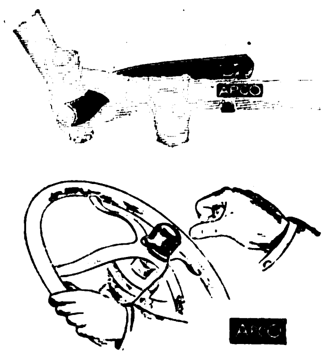
An interesting device is being put on the market, designed for making the starting of an engine in cold weather an easy matter. This device is called the Perfection Five-in-One Vitalizer and may be attached to practically any gasoline engine.

The device comprises a combination electric super-heater, a primer, an accelerator and an exhaust heater and decarbonizer, all in one. The electric superheater is controlled by a switch on the dash, draws current from the storage battery (or from four dry cells), and when turned on, instantly vaporizes a charge of gas for the engine, enabling one to start a cold engine very readily. The priming device is actuated by an arrangement which may be attached to the dash; the exhaust heater is had from the exhaust manifold through a flexible tube to the device.

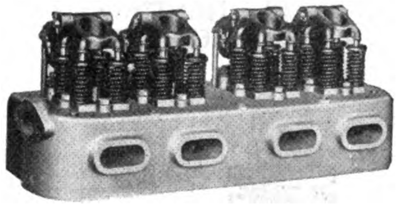
The manufacturers sell the device under a broad guarantee and with the understanding that if it is not satisfactory it may be returned within 15 days from date of purchase and money will be refunded.

**Manufactured by the Snyder Products Co., 4046 Washington Blvd., Chicago, Ill. Price $10.**

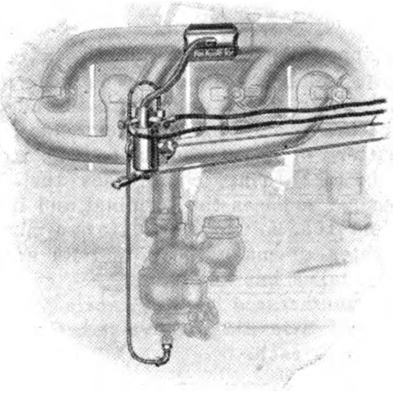
Special Ford Starter.



Two Apco Specialties.



Peugeot Type Cylinder Head.



Perfection 5-In-One Vitalizer.

## SPECIAL FORD STARTER.

Illustrated herewith, is a mechanical starter for Ford cars that should be of interest to every Ford car owner. This device is said to be simple in application and to require but a few changes of fittings. With this form of starting device, the makers claim that all chances of kick or back-firing are eliminated. It is built entirely upon the engine and consists of a special ratchet engaging device a flexible chain, a starting pedal and a priming pedal. The operation is simple. When idle, the starting pedal lies forward on upper floor board, and locked down. To disengage it, it is only necessary to press down a plunger which extends up through the floor board directly under the reverse pedal. This plunger is also a primer, and when pressed down at the same time as the starter pedal, the engine is primed. Thus the plunger serves to disengage the pedal and to prime the carburetor if priming is necessary.

The manufacturers claim that but from 30 to 40 pounds pressure upon the pedal is necessary under ordinary conditions to start the engine; not much more than is required to compress the clutch pedal of some of the larger cars.

**Manufactured by The Equi Light Company, Inc., Paducah, Ky. Price $20.**

## PEUGEOT TYPE CYLINDER HEAD.

For the owner who is remodeling his Ford car for speed work, the Peugeot type of cylinder head illustrated should make an attractive proposition. This cylinder head is made of a special grade of semi-steel nickel plated and water jacketed, and fitted with 16 overhead valves, which open directly into the explosion chamber and are operated through push rods, which extend to the regular Ford tappets. The design is such that the spark plugs are located in the centre of the combustion chamber.

All holes in the cylinder and manifold are Ford standard, therefore no drilling or tapping is necessary. The application of this head is very simple and the makers claim an increase of approximately 100 per cent. horsepower and much gasoline efficiency.

**Manufactured by Roof Auto Specialty Co., Anderson, Ind. Price $85.**

## TWO NEW APCO SPECIALTIES.

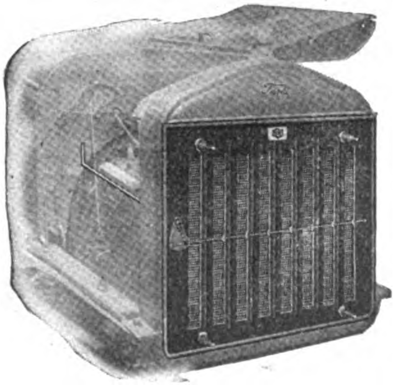
Two new Apco specialties for the Ford car are just being put on the market. The first is a spindle arm anti-rattler or silencer, which is designed to prevent movement and rattling of the spindle arm bushing. The device consists of two heavy formed springs so arranged that undue movement of the spindle arm is prevented. It is neat and compact and can be quickly attached with the fingers. The device is packed in a box and when packed weighs two ounces.

The horn button attachment, which is designed to hold the horn button on the centre of the top of the steering wheel, as manufactured at present consists of a complete unit with button, and is finished in black enamel. When packed in a box its shipping weight is two ounces.

**Manufactured by Apco Manufacturing Co., Providence, R. I. Price for anti-rattler, 40 cents a set; for horn button complete, 50 cents; horn button attachment without button, 25 cents.**

## H-M METAL RADIATOR COVER.

A handy device for the winter motorist is illustrated herewith and called the H-M Metal Radiator Cover. This device is made of sheet metal divided into eight adjustable shutters operated as one from the dashboard. It is attached to the radiator with springs, assuring a tight and



H-M Metal Radiator Cover.

non-rattling fit at all times. The cover may be entirely closed, half, three-quarter, quarter closed or entirely open, depending upon weather conditions.

It is said that it is staunchly constructed and may be used many seasons.

**Manufactured by the H-M Manufacturing Co., Indianapolis, Ind. Write for prices and descriptive literature.**

### A-B AUTO-EYES.

A unique headlight is being put on the market under the name of A-B Auto-Eyes. This device is so arranged that when an electric button, which may be located near the driver, is pressed, the headlights are tilted forward; continued pressure upon the button bringing them back to horizontal position.

The equipment consists of two headlights with the necessary connections and wiring. In the right headlight case is located a small specially designed motor, which is fitted with an arm and eccentric, which tilts the lamps as the motor is brought into action. The left lamp is actuated by the same motor, and as both lamps are connected by a coupling and shaft they function together.

**Manufactured by the Adams-Bagnall Electric Co., Cleveland, O. Write for prices.**

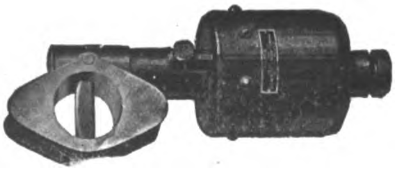
### PIERCE GOVERNORS.

The delivery car owner, as well as the truck owner, is directly responsible for accidents caused by his vehicles, so that the limiting of car speed by means of governors is becoming common practise on these classes of machines.

The Pierce Governor is designed for practically any engine and driven by gears from the transmission. It is of the centrifugal type and so constructed that the opening of the centrifugal weights actuate a rack, which in turn opens or closes the butterfly valve located in the intake line. The device is compact in form and may be set to give practically any maximum speed. When once set it cannot be tampered with by the driver without the knowledge of the owner.

It is so arranged as to give maximum opening at low speeds and partially closed valve at and near the maximum speed for which it is set. The opening is entirely controlled by the car speed, so that plenty of opening may be obtained for heavy running. The device is a practical insurance against overspeeding and a full check against careless driving.

**Manufactured by Pierce Governor Co., Anderson, Ind. Write for prices and catalogue.**



The Pierce Governor.

### THE HANDY TERMINAL.

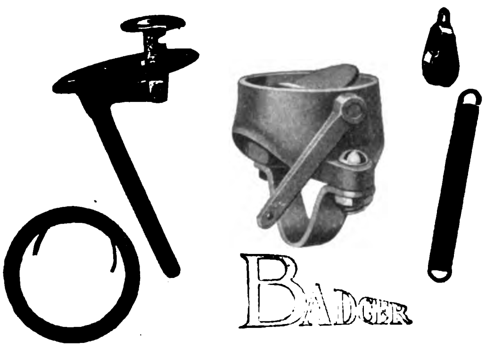
Every motorist at some time has had the aggravating experience of engine trouble, due to faulty ignition connections. For efficient engine action perfectly tight connections are necessary. The Handy Terminal is designed for practically any type of cable connection, and is connected without soldering. The ferrule is fitted to the cable and the stripped wire firmly held by a copper clip, which is claimed not to work loose. The jaws of the device are threaded on the inside and engage the threads of the battery or spark plug bolt. One motion raises the ring, compresses the steel spring, releases the terminal and lifts it from the bolt. There are no nuts to tighten or make loose, and its application takes but an instant.

The HANDY TERMINAL

**Manufactured by the Francis-Rand Co., 400-401 Erie Bldg., Cleveland, O. Price, 25 cents each.**

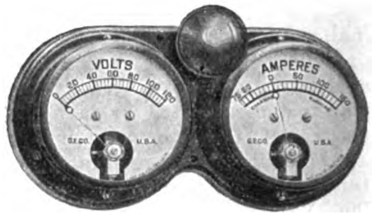
### BADGER CUT OUT.

A new muffler cut out is now on the market which is designed for use on the Chevrolet 4-90, a car that is not equipped with a cut out at the factory. This outfit is known as the "Badger" and is easily attached to the machine. It is only necessary to cut a V section from the exhaust pipe, directly in front of the muffler, and then clamp the cut out over the opening.



The manufacturers claim this is a quality proposition and that it is designed to give service and satisfaction. The valve is made of the best grade of iron, accurately machined and has a leak-proof feature, which is exclusive with this valve.

**Manufactured by the Auto Parts Manufacturing Co., 313 Milwaukee St., Milwaukee, Wis. Price upon request.**



### COMBINATION VOLT-AMMETER.

The General Electric Co. has developed a new, direct current, duplex instrument with self-contained attachment for illuminating the dials, which is particularly adapted to electric vehicles and other automobile direct current panel applications, such as are used for battery charging sets and lighting.

The device consists of an ammeter and a voltmeter mounted on a bakerlite base, with outside dimensions of 5½ by 2⅞ inches and having a depth of 1⅜ inches. The D'Arsonval permanent magnet moving coil construction is used in both elements, the resistance for the voltmeter is self-contained, the ammeter requires an external shunt. The instruments are finished dull black and can be equipped with paper scale with black marking or with metal scale plate and white figures on black background. Voltmeter of standard capacities range from 10 to 150 volts and for the ammeter any desired capacity can be obtained, either for one way indication or double, showing charge and discharge readings. Terminals may be connected either from the back or from stud terminals as desired.

**Manufactured by the General Electric Co., Schenectady, N. Y. Write for prices, giving full data of instruments required.**

### RADIATOR EMBLEMS.

The automobile of the veterinary, like that of the physician, often carries the sign of the profession, so that it may be identified to traffic officers and others who can help to expedite its progress. A radiator emblem, attached to either the filler cap of the radiator or to the radiator front, is a dignified means of identification. Such emblems may be obtained for practically any type of car, and in many designs of blue and green crosses, nickel plated or chased and gold.

**Manufactured by the Art Metal Works, Newark, N. J. Write for illustrated catalogue and prices.**

### TWITCHELL GAUGES.

The perplexing problem of what to give the motoring friend as a Christmas present is made very easy of solution by the Twitchell Gauge Co. of Chicago, which has prepared a special holly and mistletoe box for use by dealers in "dressing up" the exterior of the container in which the gauge is ordinarily sold.

These decorative covers are furnished free to the trade and make a strong appeal when displayed on counters or in windows.

# *Labor and Money Saving Suggestions for the Motor Car Repairman*

### TIMER INSULATION.

(Figure 39.)

A large percentage of electrical troubles on the automobile are caused by the breaking down of insulation by oil or water and consequent short circuiting of the current. This trouble frequently is found at the points where the timer wiring is connected with the timer in the Ford car. Obtain a piece of circular loom (the largest size) at any electrical supply house, long enough to extend from the dash board to the timer and once around it, and starting about half an inch from the end cut four holes through one side just large enough to slip over the timer binding posts, the distance between them being the same as the distance between the timer binding posts. Now connect the wires with the timer and pull one through each hole in the circular loom, winding the tube around the timer and pulling the wires tight to hold it in place. When all wires are pulled tightly in the tube and the circular loom slipped over the tops of the binding posts as shown in the illustration, it will be impossible for oil or water to reach the wires. The circular loom is flexible enough to permit easy turning of the timer.

### GEAR REPAIR.

(Figure 38.)

Oftentimes the tooth of a spur gear on the air pump or an accessory is broken off through carelessness. Unless repaired a new gear is necessary before the pump can be used. When the gear is not subjected to very great strain the following method of tooth replacement very practical. While it is not to be recommended for gears that are in constant use or in places where gear action is vital, it makes the replacement of an unimportant gear unnecessary. File the broken tooth off smooth with the rim and bore holes about ⅜ inches apart across the face of the gear. The size of the holes to be not greater than the width of the narrowest part of the tooth. After having tapped the holes insert round headed screws through the rim, upsetting the ends with a nail set or punch so that they will not loosen. Then file the heads to conform with the general shape of the teeth, trying it in place from time to time. Such a temporary repair can be made in a very short time and may be improved at a later date by filing a new tooth out of iron and screwing it in place in the same manner.

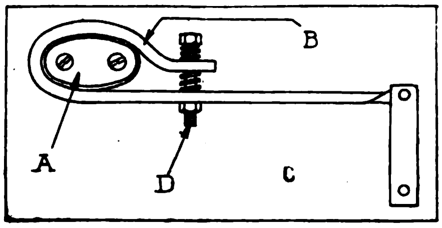


Fig. 36—Shock Absorber.

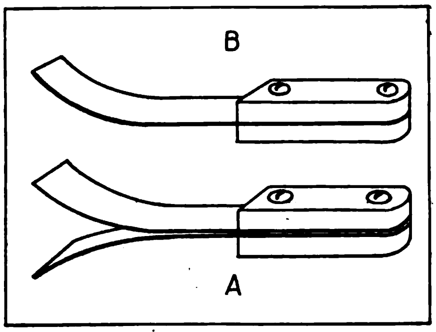


Fig. 37—Carbon Scrapers.

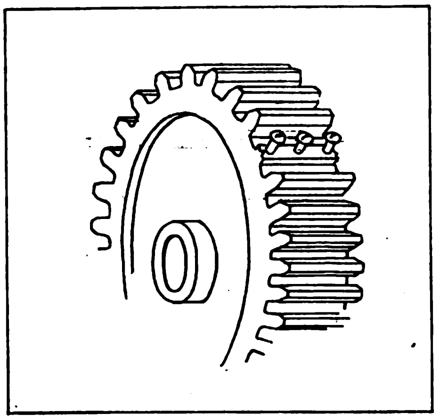


Fig. 38—Temporary Gear Repair.

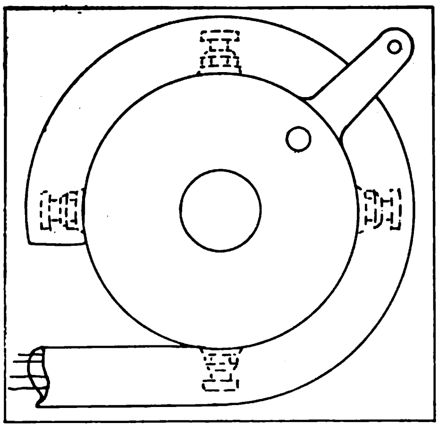


Fig. 39—Suggestion for Method of Insulating Ford Car Timer.

### CARBON SCRAPERS.

(Figure 37.)

The demon "carbon trouble" causes, perhaps, more trouble and loss of engine power than any other engine fault. Although many people believe that in order to dislodge carbon from the engine a removal of the pistons or engine head is necessary, the ejection of the demon may be accomplished simply through the hole left upon the removal of the spark plug. Get three lengths of steel clock spring, preferably about ⅜ inch wide and 10 inches long, and, after removing the temper from about four inches of the end, bore two holes through them and mount in handle as shown in the illustration. The holes will allow the handle screws to pass through the spring, holding it firmly in place. The free ends of the springs should be ground rounding. If two springs are mounted as shown at A the inside top of the cylinder and the piston may be scraped at the same time. Turn the engine crank over until the piston in the cylinder upon which the work is to be done is at the top of its stroke, insert the scraper A and move back, forth and around inside until some of the carbon is dislodged. Remove this loose carbon by inserting a tire pump tube through the spark plug hole and blowing, then repeat the operation with the scraper. With a little care most of the carbon will be removed by this process and the power of the engine greatly augmented.

### SHOCK ABSORBER.

(Figure 36.)

A subscriber residing in Rhode Island has made a shock absorber which he constructed very easily. A piece of cast iron of oval shape is bolted to the frame of the car (see "A".) Most any junk yard will furnish such a piece of iron, or it can be obtained from a foundry from a wooden pattern which is easily whittled out with a knife. Around this oval a heavy piece of iron is bent. One end of the iron is twisted at right angles and fastened to a shorter length of iron, "C," by a single bolt. The other end is looped over and a bolt passed through it, fastening it to itself, as at "D." A spring is placed between the end of the bolt and the iron and also between the end of the iron and the bar itself.

The free end of "C" is fastened by a single bolt to a clip on the axle. To give good service the iron should be about ⅜ inch thick, 1½ inches wide. The oval should be about three by two inches. The distance between the outer edge of the oval and the centre of "C" should be about eight inches.

When the car is at rest with no load the absorber should be in the position shown in the cut. As the body of the car drops the oval is slightly turned on its centre, bringing a pressure with friction on the arm, which tends to pull the oval back to its normal position. The same thing happens when the car "jumps." The action of the shock absorber is controlled by the tension of the iron strap on the oval, which is adjustable at the bolt "D."

### CIRCULATION HINT.

(Figure 41.)

At present, many small cars are being remodeled and used for racing. Some of them, being equipped with comparatively low speed engines, are not fitted for high speed work and auxiliary fittings are necessary. A simple thermo-syphon cooling system may be found inadequate and may require mechanical circulatory air. We give a suggestion for such an equipment in the illustration. With an arrangement such as is shown, very little machine work or alteration of original design is necessary. At the same time, however, the water is kept circulating by the fan arrangement in the water connection. A hole is drilled in the water coupling as close to the bend as possible. In this hole a shaft is fitted, projecting into the coupling. A two, three or four-blade fan, made of sheet iron, and bent similar to a boat propeller, is fitted to the end of the shaft. A suitable iron bearing is provided for the other end. The fan and shaft may be driven by score pulleys and belt either from the crankshaft or fan pulley.

### MECHANICAL TIRE PUMP.

(Figure 40.)

How many there are who have started on an automobile trip with anticipation of rest and been deprived of all pleasure by being obliged to pump up three or four tires. If one cares to eliminate this work one will take advantage of this suggestion and make a pump arrangement which may be driven from a rear wheel. Attach a heavy iron hook underneath each running board on the automobile, near to the outside edge. Bore a hole in the foot step of the tire pump large enough to take the hook. It will probably be found necessary to bend the plunger into an eye so that a bolt may be slipped through it. Provide a length of strap iron long enough to reach from this eye to the hub wrench, which is placed over the hub of the rear wheel, as shown in the illustration. The whole assembly is shown. If one is provided with a long enough air tube it will be possible to inflate either of the three tires. The other tire may be inflated by placing the pump on the other side of the machine. There are three ranges of speed at least, as it does not matter which way the rear wheel turns.

Jack up one rear wheel, attach the pump as shown, start the engine, throw in the clutch and let the engine do the heavy work of pumping up the tires.

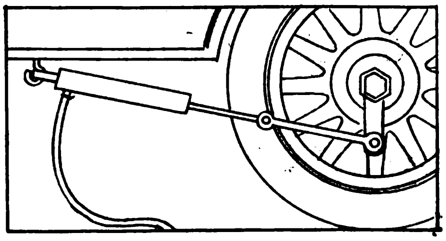


Fig. 40—Mechanical Tire Pump.

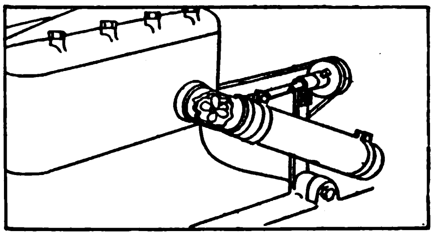


Fig. 41—Thermo-Syphon Auxiliary Pump.

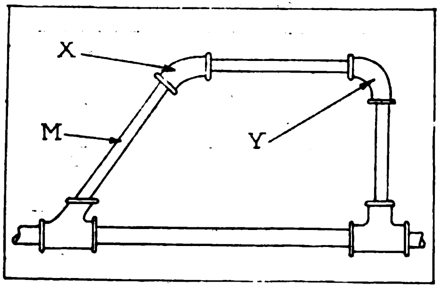


Fig. 42—Exhaust Heater.

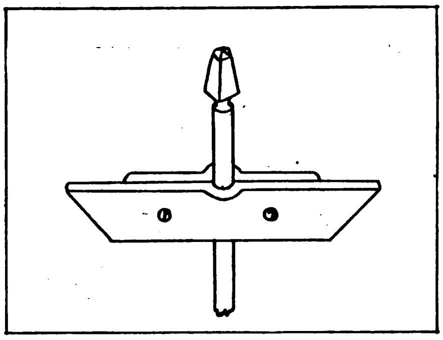


Fig. 43—Valve Reseater.

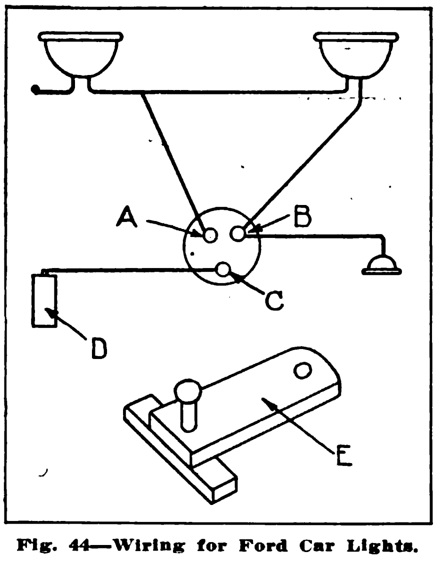


Fig. 44—Wiring for Ford Car Lights.

### VALVE RESEATER.

(Figure 43.)

By constant regrinding the valve seats often become so worn and grooved that the valves seat so deeply as to permit only a small opening and a consequent loss of power. When this results the valves should be replaced by larger ones and the valve seats recut to a larger diameter. The illustration shows an easily constructed valve reseating device. The cutter blade is made from a flat piece of tool steel, fitted with a strap for holding it to an old twist drill, and with its edges cut to an angle of 45 degrees. The shank of the drill should be left long enough so as to extend down through the valve guides, and large enough to fit and form a centre for the cutting tool.

### FORD HEADLIGHT CONTROL.

(Figure 44.)

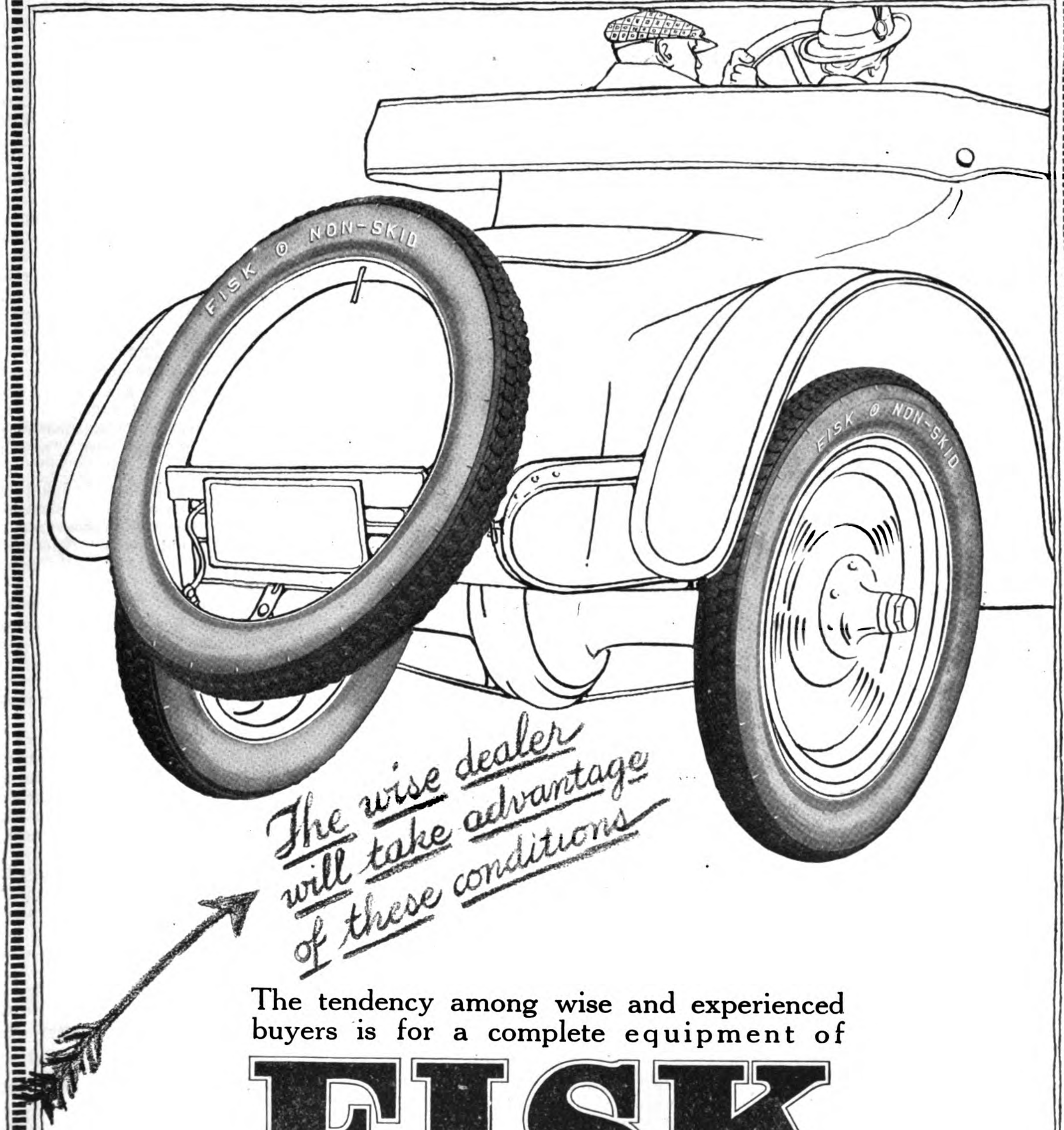
Everyone knows just what happens when the Ford car engine is running slowly on high speed. The headlights do not furnish such a bright driving light as is given when the engine is running at full speed. Quite frequently it is necessary to drive through bad roads where the car speed does not exceed eight miles per hour for half an hour at a time. It is then that full light is most necessary, but not obtainable with the present wiring. We give a suggestion for wiring the Ford car in such a way that this annoyance may be minimized. A, B and C are the three points of an ordinary switch, D is the magneto terminal. The insert E shows the switch bar, which swings on C, and the method of soldering a cross bar so that A and B may be connected at the same time. With the switch covering A and B a concentrated light is obtained in the left headlight. With the switch thrown to B only both headlights are lighted. Care should be observed not to run with the engine speeded up and only one light burning, as the light bulb will be burned out.

### EXHAUST HEATER.

(Figure 42.)

Our illustration shows a practical exhaust heater which can be made in a short time by anyone having a pipe threading tool. The exhaust pipe is cut at a point between the exhaust and the muffler and a pipe T is screwed to it. Two pipes are screwed to the T, one going up through the floor of the car to an elbow, "X," into which is screwed a short length of piping, which forms the heater. The other connects with a second T. From the second elbow on the heater a pipe is run to the second T, which is connected with the muffler by another pipe. It is desirable to have the Ts in line so as to form a straight exhaust line from manifold to muffler.

The size of the heater pipe itself may be varied by using reducing elbows, as at "X" and "Y." If it is found that the devices furnishes too much heat, it may be covered with asbestos and painted to match the finish of the car. A butterfly valve may be fitted in the pipe at "M" to regulate the heat supply.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# NEW RULINGS ON CHASSIS TAXATION

## Definitions on Wholesaling and Other Points in Summary of Recent Internal Revenue Decisions

Additional summarized rulings made on the manufacturer's tax in the War Revenue Act have been published by the Internal Revenue Department. These relate, by implication and directly, to automobile chassis and the dealing in automobiles to consumers and to subagents for resale.

In regard to the form of taxing chassis the National Automobile Chamber of Commerce has issued the following, as supplemental and explanatory to its first bulletin:

"FORM OF TAXING CHASSIS. The rule may be stated in simpler terms, to wit:—No tax will attach under section 600 to a chassis when sold, save and except where it is sold to a consumer or other person who is not subject to the payment of the tax imposed by said section."

The summary, based on rulings secured by inquirers on different points of the law, follows:

1. Bottlers—A person who receives drugs or other goods in bulk, and bottles, labels and otherwise prepares same in a final salable and marketable form is held to be the manufacturer within the meaning of section 600.

2. Chassis—Where a chassis is sold to a consumer or other person or concern who or which is not subject to the payment of the tax imposed by section 600, the tax attaches upon the sale; where a chassis is sold to another manufacturer, producer or importer in this country, who or which is subject to the tax upon the sale of the completed machine, the tax attaches upon the sale of the completed machine by such manufacturer, producer or importer.

3. Dealers—Dealers in automobiles who sell both to users and subagents for resale are wholesalers within the meaning of section 602, and are liable to the floor tax imposed by said section.

4. Sale Price—The tax imposed by section 600 is squarely on the manufacturer, producer or importer. If the price of the article sold is increased to cover the tax, the tax is on the increased price, not on the original price.

1. Freight—(a) In all cases in which shippers have credit arrangements with carriers under which their goods are shipped prepaid, but the freight charges are not actually paid until after Nov. 1, 1917, the tax is not imposed on amounts paid for such transportation begun prior to Nov. 1, 1917.

(b) If the consignees have credit arrangements with carriers under which they settle their freight bills on or before the 15th of the month, the tax is not imposed or charged on freight bills for the transportation of goods actually delivered prior to Nov. 1, 1917.

(c) No tax is imposed upon amounts paid for transportation of goods by freight in any instance in which the property was actually delivered to the consignee prior to Nov. 1, 1917, and by reason of the loss of the bill of lading dispute as to the amount of charges, or other delay, whereby the payment was not made at the time of delivery.

(d) No tax is imposed on the amount paid for transportation on a through bill of lading to or from Canada or Mexico or any foreign country. If, however, property is shipped by freight from a point in the United States to a seaport on one bill of lading and is then reconsigned for export, the tax is imposed on the amount paid for the transportation to the seaport.

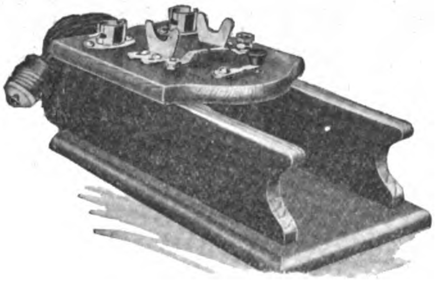
(e) Goods which are imported into the United States and reconsigned at port of entry to a point in the United States are subject to the tax upon the amount paid for transportation from the port of entry to destination in the United States. If the property is consigned from a foreign port to a point within the United States without being reconsigned at the port of entry, the tax is not to be imposed.

(f) Tax on freight transportation beplies to all collect freight shipments delivered to consignee after that date. came effective on Nov. 1, 1917, and ap-

(g) The exemption allowed in section 502 is held to apply only to payments for services which are made by the United States, a state, territory or the District of Columbia. The exemption does not apply to payments for services which are made by other persons.

### COMBINATION TESTER.

The Jefferson Ford unit and combination tester is a device just being placed on the market, designed to facilitate the testing of the Ford coil unit. Speed and accuracy in testing the coils makes the device handy, for in addition to the coil testing device the tester is fitted with equipment for the testing of automobile lamps, regardless of voltage or candle power, spark plugs of any type, electric horns, signals, coils, etc.



**Jefferson Ford Coil Unit Tester.**

The top of the unit is fitted with both a single and double contact lamp socket for testing light globes; a flexible spark plug testing rack; an adjustable spark gap and a contact button. Upon the end of the device are mounted two terminals, to which may be connected leads for general circuit testing and trouble finding.

**Manufactured by Jefferson Electric Manufacturing Co., 426-430 South Green St., Chicago, Ill. Price for No. 28, $8; for No. 30, $6.**

### CELLBEAM CONCEALED SPOT LAMP.

The Cellbeam Concealed Spot Lamp is a radical departure from conventional types of spot lamps in that instead of being used clamped to the windshield it is carried in the hand.

The device projects a concentrated beam which extends 500 feet in a straight line and a diffused glow which illumines near by objects at a greater angle. It is fitted with a six-volt nitrogen bulb and silvered reflectors. The exterior is finished in polished nickel and the handle is fitted with a focusing adjustment.

With the device is furnished five feet of flexible cord, which is connected with the battery in the usual manner, making an excellent "trouble lamp." The size is so small that it may be carried in one of the door pockets.

**Manufactured by Cellbeam Manufacturing Co., 1101 Bedford Ave., Brooklyn, N. Y. Price, $8.**

### MORE ACCESSORY DISPLAYS FOR THE NATIONAL SHOWS.

The following six new accessory exhibitors have been added to the list of those published in last month's Journal: Challoner Co., Oshkosh, Wis.; Guarantee Liquid Measure Co., Pittsburgh, Pa.; Wire Wheel Corporation of America, Buffalo, N. Y.; Kales Stamping Co., Detroit, Mich.; Otis Elevator Co., New York; Air Device Co., Chicago, Ill. The first three concerns mentioned will exhibit at both the New York and Chicago shows, while the Kales Stamping Co. and Otis Elevator companies will exhibit only at the New York show. The Air Device Co. will have a display at Chicago, but will not enter the New York exhibition.

### R. B. CRANE IN NEW POSITION.

R. B. Crane, formerly sales manager of the Double Fabric Tire Co., has been appointed manager of the sundry division of the Racine Rubber Co., at Racine, Wis. This concern manufactures a very complete and interesting line of accessories and repair materials.

### HAYES MANUFACTURING CO. DOES BIG BUSINESS.

The Hayes Manufacturing Co., Detroit, Mich., report net earnings for the past 14 months of $390,444.26. The combined surplus at the close of the period was $540,048.36 and there were about $2,000,000 worth of unfilled orders on hand. Dr. James T. Upjohn of Kalamazoo, Mich., was elected to the directorate of the company.

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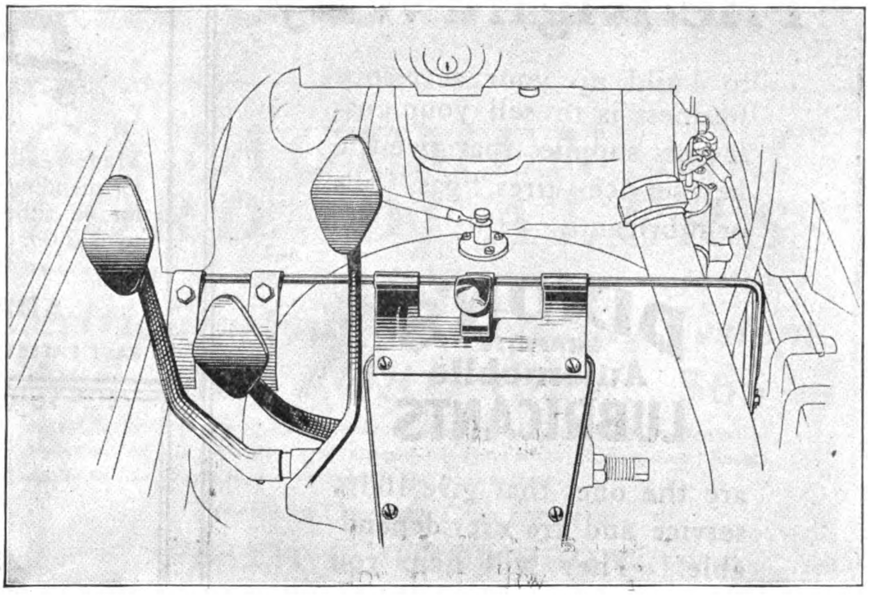

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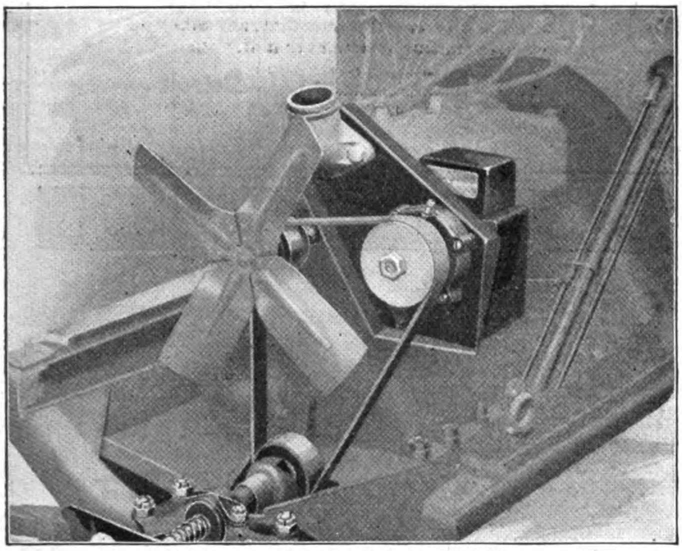

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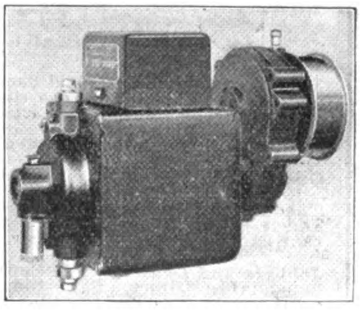

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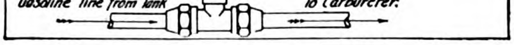

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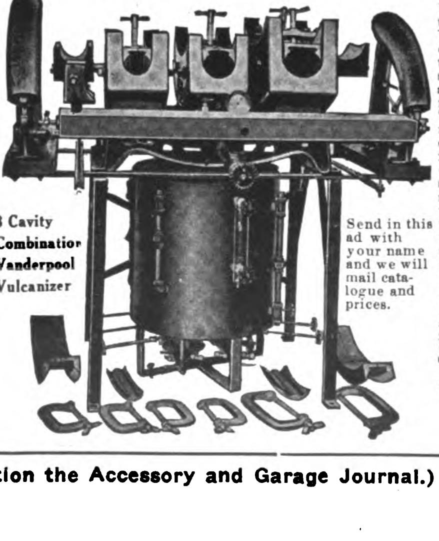

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| **Splitdorf 4 cyl., Models A, T, X and D** | **10.00** |
| **National 4 cyl. low tension** | **8.00** |
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WE REPAIR any make magneto, coil, lighting generator or starter and give 24 hour service. Member Detroit Automobile Trade Association.

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## INDEX TO ADVERTISERS

Page
A. B. C. Starter Co....52
Adamson Mfg. Co....52
Advance Auto Accessories Corp.... 7
American Motors Parts Co....53
Apperson Automobile Co....57
Atwater Kent Sales Co....55
Auglaize Motor Car Co....62
Auto Parts Co....55
Auto Salvage Co., Inc....54
Auto Wrecking Co....53

Bacon Service Co....64
Ballman-Whitten Mfg. Co....52
Bay State Pump Co....52
Bearings Service Co....57
Bilodeau Ball Bearing Works....59
Black & Decker Mfg. Co....57
Bowser & Co., Inc., S. F....59
Brown, Walter H....55
Brunner Mfg. Co.... 5
Buck & Co., C. H., Inc....64
Buell Explosion Whistle Co....64
Butler Mfg. Co....53

Cambridge Auto Parts Co....55
Cave Welding & Mfg. Co....53
Champion Ignition Co.... 8
Chase & Co., L. C....Cover
Continental Auto Parts Co....62
Cox Brass Mfg. Co....12

Detroit Magneto Exchange....53
Dixon Crucible Co., Jos....52
Dyer Co., G. H.... 1

Eby, Henry E., Jr....54

Faw, Inc., J. H....56
Fisk Rubber Co....49
Fitzgerald Mfg. Co.... 2

Gallagher, J., Edward....55
Garford Motor Truck Co....56
Gardner Governor Co....58
Gibson-Hollister Mfg. Co....56
Greenfield Tap and Die Corp....10

Harvey Spring & Forging Co....11
H-M Manufacturing Co.... 9

Imperial Brass Mfg. Co....61
International Lubricants Co....63
International Metal Polish Co....61

Jefferson Electric Mfg. Co....10
Jenkins Vulcan Spring Co....56

K. B. C. Company....64
Kennedy Car Liner and Bag Co....64

Mabey's Electric and Mfg. Co....61
Manufacturer 910....53
Martin Mfg. Co....58
Master Body Co....Cover
Maxwell Bros....55
Milbradt Mfg. Co....58
Mossberg Co., Frank....Cover
Motor Specialties Co.... 8
Motorists Accessories Co....54
Mueller & Co., R. S....63

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## INDEX TO ADVERTISERS
(Continued)

Page
National Cash Register Co.... 4
New Departure Mfg. Co....64
New Era Spring and Specialty Co....57
Niehoff & Co., Inc., Paul G....61
Norma Co. of America....11

One Hand Auto Top Co....13

Pierce Governor Co....56
Pillsbury Mfg. Co....60
Poughkeepsie Utilities Corp....62
Prest-O-Lite Co., Inc....58
Purdy Motor Co....53
Puritan Machine Co....53

Ross-Gould List and Letter Co....56

Scaife, Wm. B. & Sons Co....58
Schlieder Mfg. Co....57
Page
Schrader's Son, Inc., A....57
Service Gear and Machine Co....53
Starrett Co., L. S....14
Stevens & Co....63
Stockbridge Body Co....60
Sullivan Motor Car Co....56
Superior Mfg. Co....58

Thompson, Peter L....53
Toledo Gas Engine Works....64

United Engine & Mfg. Co....58

Vanderpool Co....52
Versal Products Mfg. Co....51

Walden-Worcester, Inc....Cover
Weston Electrical Instrument Co....62
Whittier Co....59
Williams Foundry and Machine Co....63
Worcester, M. L....55

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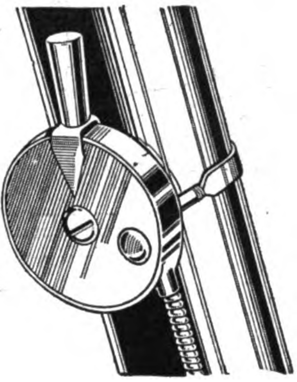

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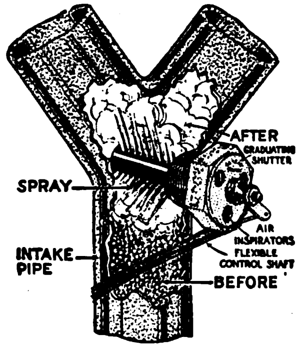

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**For quick disposal I am offering at a big reduction these brand new units at**

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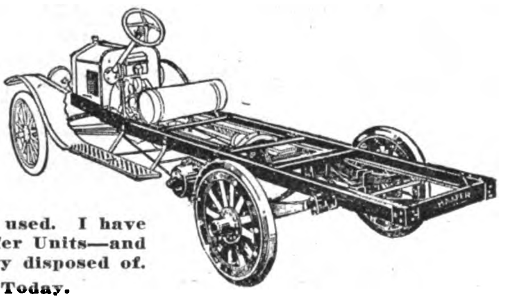

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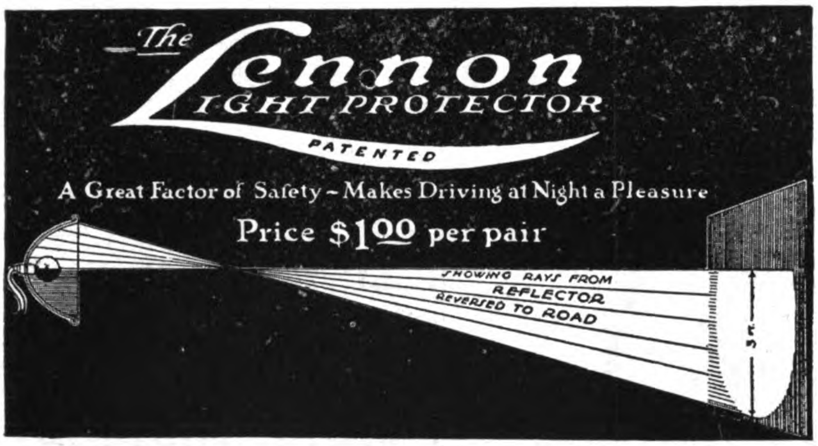

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**Trucks of 1, 1½, 2, 3½, 5 and 6 ton capacity. 4½, 7 and 10 ton Tractors. The Garford Road Builder.**

**THE GARFORD MOTOR TRUCK CO., Lima, Ohio.**

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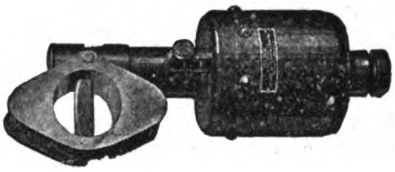

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means absolute freedom from rust throughout the life of the plug. This new finish is a handsome gray which still further enhances the value of the world's super-plug.

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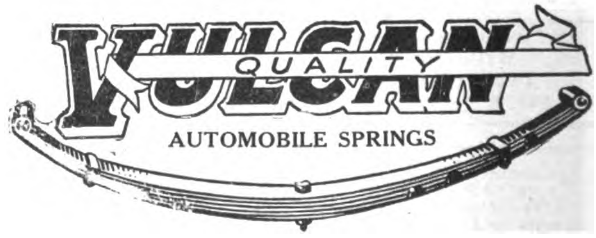

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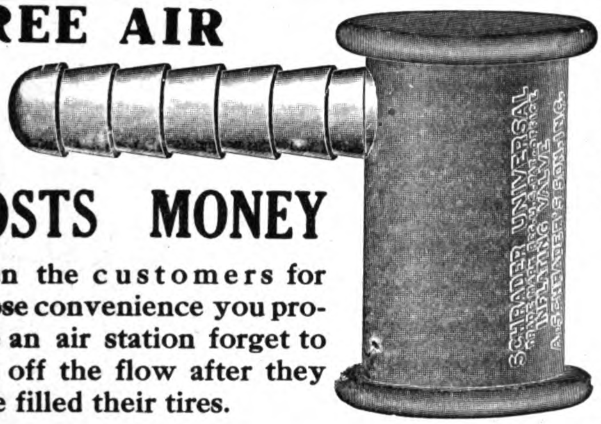

# COSTS MONEY

when the customers for whose convenience you provide an air station forget to turn off the flow after they have filled their tires.

Guard against this waste by attaching a

## Schrader Automatic Inflating Valve

to your air hose.

Thanks to this appliance your bottled air locks itself into the tank the minute it is taken off the tire-valve. You turn on the air by pressing the nozzle of the inflating valve against the tire-valve and you turn it off by removing the device from the tire-valve.

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DETROIT, MICHIGAN

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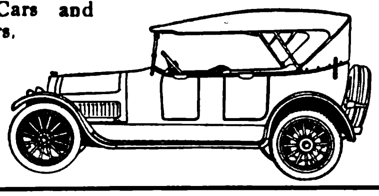

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Kokomo Indiana

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**On another firm's product is safe when you know how its constructed and by whom.**

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ready for use as soon as unpacked. Simply place plug into electric light socket.

Brings the ordinary tire inflation to pressure in about ½ minute. A 34x4 tire can be pumped from dead flat to full pressure in four minutes.

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32 and 220 Volt at $3.00 extra. Universal windings.
Can be used on either direct or alternating current.

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*Copy of booklet "Friendly Touch" upon request.*

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Nation-wide Service on Bearings

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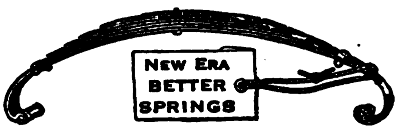

It's a poor policy to risk repeating the annoyance of a broken or weak spring—and the delay—by saving only a very little in buying or selling a **cheaper** spring instead of a **"New Era BETTER Spring."**

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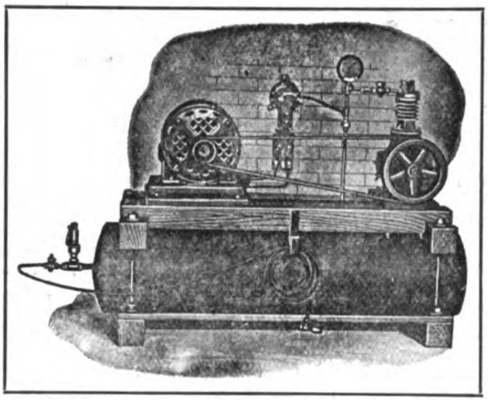

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*Economical — Efficient and Cheap*

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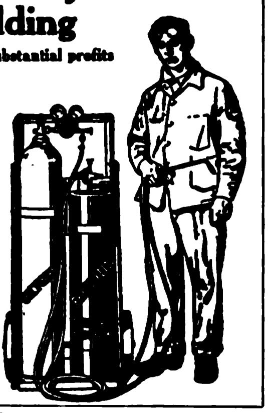
**Savings made please your patrons and pay good substantial profits**



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adds to the efficiency and usefulness of any good welding equipment. We furnish thoroughly high grade welding apparatus for $75.00. (Canada $100.00). The average user will also need gas cylinders at an additional cost, and about $10.00 worth of welding supplies. Truck and special equipment for cutting operations at extra cost.

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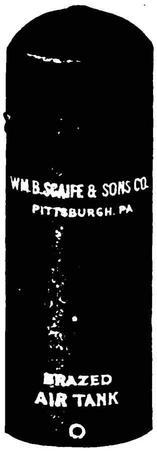

# SCAIFE COPPER-BRAZED
# AIR TANKS

are positively guaranteed to hold air indefinitely without loss of pressure.

## CAUTION

Do not confuse Scaife Copper-Brazed Tanks with the cheap Welded or Soft-Soldered Tanks made by others.

We Also Manufacture
**SCAIFE GASOLINE STORAGE OUTFITS**

*Send for Catalogues.*

**WM. B. SCAIFE & SONS CO.,**
First National Bank Bldg. PITTSBURGH, PA.

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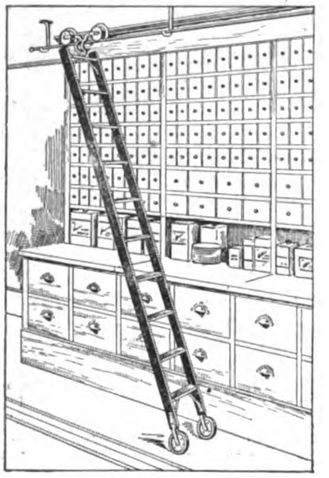

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*Send for your copy of this catalog today*

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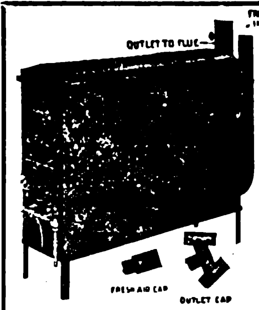

# "SUPERIOR"
## Safe Garage Heater

**Safest and Best Heater**
**for Garages of All Kinds**

***BURNS NATURAL OR ARTIFICIAL GAS***

**All air taken from outside building.**
**Gasoline fumes cannot enter heater.**

*Dealers Make Good Profits. Write!*

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MARTIN MANUFACTURING CO.
LANCASTER OHIO

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACT OF CONGRESS OF AUG. 24, 1912, OF

THE ACCESSORY AND GARAGE JOURNAL,
PUBLISHED MONTHLY AT PAWTUCKET, R. I.
For Oct. 1, 1917.

State of Rhode Island, County of Providence.

Before me, a Notary Public, in and for the state and county aforesaid, personally appeared William H. Black, who, having been duly sworn according to law, deposes and says that he is one of the owners of the Accessory and Garage Journal, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management, etc., of the aforesaid publication for the date shown in the above caption, required by the act of Aug. 24, 1912, embodied in section 443, Postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor and business managers are:

PUBLISHER, W. H. & D. O. Black, Jr....Pawtucket, R. I.
EDITOR, E. H. CUSTER.................Pawtucket, R. I.
BUSINESS MANAGER, W. H. Black....Pawtucket, R. I.

2. That the owners are:

W. H. BLACK............................Pawtucket, R. I.
D. O. BLACK, JR........................Pawtucket, R. I.

3. That the known bondholders, mortgagees and other security holders owning or holding one per cent. or more of total amount of bonds, mortgages or other securities are:

M. J. BLACK, Mortgagee........... ....Pawtucket, R. I.

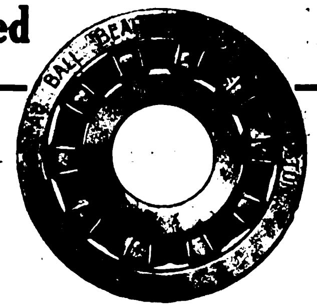
4. That the two paragraphs next above, giving the names of the owners, stockholders and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company, but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association or corporation has any interest direct or indirect in the said stock, bonds or other securities than as so stated by him.

(Signed) WILLIAM H. BLACK, Co-Partner.

Sworn to and subscribed before me this 20th day of Oct., 1917.

(Signed) THOMAS BESWICK, Notary Public.
[Seal] (My commission expires June 30, 1920.)

## Guaranteed Bearings



**We Exchange Rebuilt Bearings For Old or Worn Ones**

**We credit the value of worn Bearings toward the price of our rebuilt ones**

### THE SERVICE WE GIVE

We save you time and money and guarantee the quality of the bearings sold. This service is quick and is developed to meet the needs of thousands of garages, service stations and repair shops.

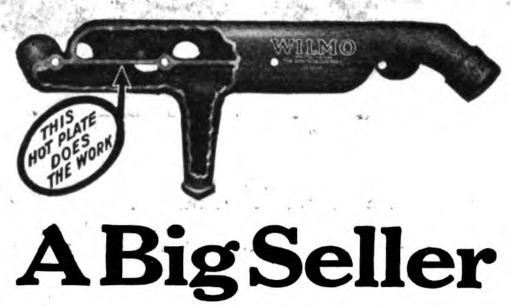
We build bearings of all kinds, experiment and originate bearings for special uses. Our work is unequaled for accuracy and perfection. The materials are the best and service and satisfaction are guaranteed.

Prices are always the lowest consistent with the work. Orders for new bearings of any type or size promptly filled.

**Send today for 1917 catalogue, listing types, sizes and prices of standard bearings. Trade discounts confidential.**

**BILODEAU BALL BEARING WORKS**
66 Stanhope Street, BOSTON, MASS.

## Vaporizes Gasoline


WILMO
THIS HOT PLATE DOES THE WORK

## A Big Seller

By completely vaporizing gasoline of whatever grade, the Wilmo Manifold permits carburetor to be turned down so as to give many more miles from every gallon, and practically eliminates carbon. Insures a smoother running engine at all speeds. Attached in a few minutes with an ordinary monkey-wrench. No holes to bore. Retail prices, $7.50 (Ford size), and up. Sold on a money-back guaranty. Dealers and garage men: Write for interesting sales proposition.

**The Whittier Company**
First National Bank Bldg., Dept 2311, Chicago, Ill.

***Wilmo Manifold***

## Safety

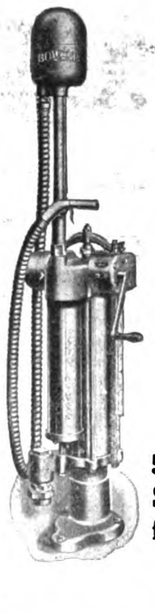
Gasoline, when stored properly, is harmless. It cannot be the cause of fires nor aid in their destructiveness.

Safety—should be the first consideration in selecting the right equipment for the storage of oils and gasoline.

Be sure that your supply of these liquids is stored in

**BOWSER** ESTABLISHED 1885

## *OIL and GASOLINE STORAGE SYSTEM*



Time, and experience in many tests, have proven their value as life, property and business protectors, without a single failure.

Bowser Systems are built for any capacity—they filter and measure gasoline correctly and do it quickly.

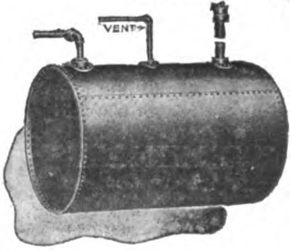
Write for interesting Fire Booklet.

**S. F. BOWSER & CO., Inc.** Fort Wayne, Ind., U. S. A.

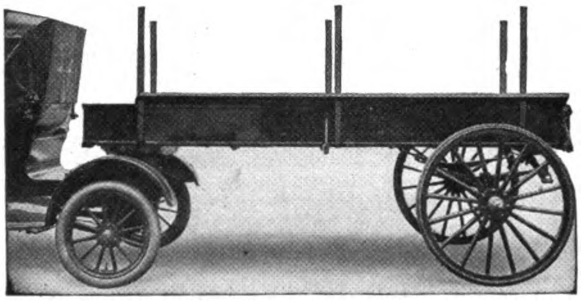
Sales Offices in All Centers — Representatives Everywhere

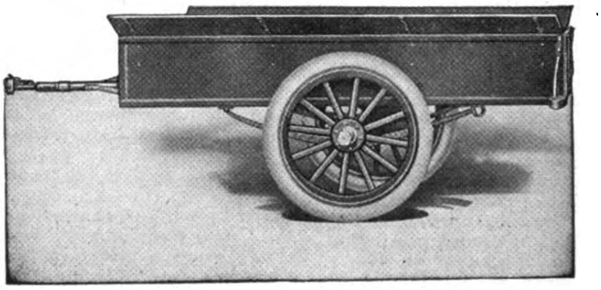
*Cut No. 101*

**5-Gal. Gasoline Storage Outfit for Indoor Use**



*Type "C"*
Undergound Tank





# Haul a 3000-lb. Load With Your Ford Car

A Ford runabout equipped with a Rocking Fifth Wheel, will have light truck capacity when used with **STOCKBRIDGE** 2000 or 3000 pound semi-trailers, and by uncoupling the body, which can be done in a very few minutes, the machine has all the utility of the pleasure car.

**STOCKBRIDGE Semi-Trailers** are the most practical equipment built. They are designed for truck service. They are operated with Ford economy. They can be coupled or uncoupled by any driver without help. The Rocking Fifth Wheel is easily removed. No time is lost. Simply remove six bolts. The owner has a car or a unit with truck capacity and makes no sacrifice of the qualities of either type of vehicle.

The car and semi-trailer can make 20 miles an hour on good roads and can climb any travelled grade.

**STOCKBRIDGE Semi-Trailers** are constructed for truck service. The bodies are express type, with flareboards or flareboards and stakes. The brief specifications are:

| | 2000 Pounds | 3000 Pounds |
|---|---|---|
| AXLE | 1 5-8 in. square, Timken roller bearings. | |
| SPRINGS | Platform type, 1 3-4 in. wide | Platform type, 2 in. wide |
| WHEELS | 46 in. outside diameter, artillery type hubs, 1 5-8 in. spokes | |
| TIRES | Solid rubber, 1 3-4 in. flat top. side wire | 2 in. flat top. side wire |
| EQUIPMENT | Complete Rocking Fifth Wheel ready for attaching | |
| PRICES | $195, f. o. b. Springfield, Mass. | $225 f. o. b. Springfield, Mass. |

**SPRINGFIELD TRAILER,** 800 pounds capacity, express body, semi-elliptic springs, 1 1-4 in. axle, ball bearings, 12-spoke automobile wheels, 30x3 in. pneumatic tires, price **$105**, f. o. b. Springfield.

**STOCKBRIDGE BODY COMPANY,**
130-6 UNION STREET
SPRINGFIELD, MASSACHUSETTS

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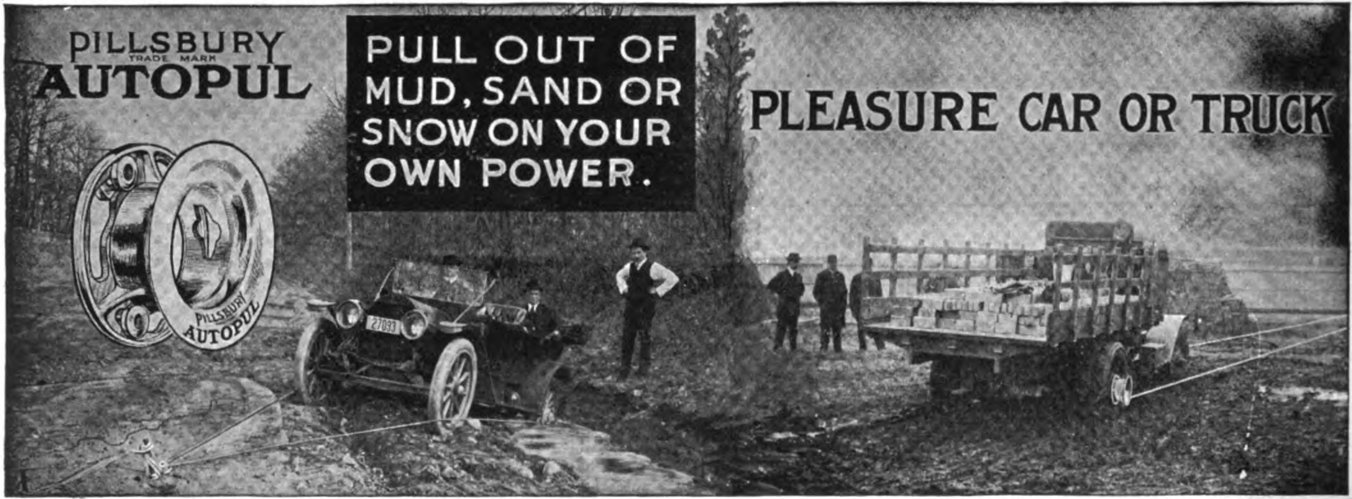


## All Highways are Passable—With a PILLSBURY AUTOPUL

An equipment, either permanent or quickly fitted to any car or truck, with which a ditched or bogged or tractionless vehicle can be drawn to a solid surface.

The outfit can be carried constantly, requires but small space and is very light. Machines can be drawn forward or back as is necessary by their own power.

*LIST PRICE, COMPLETE FITTINGS*

| | |
|---|---|
| Automobile Size, Japanned | $8 |
| Automobile Size, Nickeled | $13 |
| Truck Size, Japanned | $8 to $35 |

Indispensable for any truck, an ideal touring equipment. PILLSBURY AUTOPUL is a practical utility and an economy.

It consists of two winding drums, two special cable hooks and locking bolts and nuts. Stakes and cable furnished as extras, the cable or rope in lengths to meet any requirement.

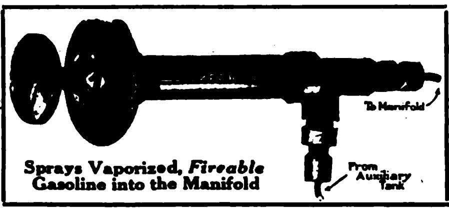
**PILLSBURY HUBPUL** For Ford and model 490 Chevrolet cars —a combination Hup-Cap, Wheel Puller and Auto Capstan, consisting of two hub drums, two spoke hooks and wheel puller cap screw.

| | |
|---|---|
| Complete Set, Japanned | $4 |
| Complete Set, Nickeled | $6 |

*All quotations f. o. b. Minneapolis, Minn.*

*DEALERS AND JOBBERS: We have a big sales proposition for you. Write for it today.*

**PILLSBURY MANUFACTURING COMPANY, Minneapolis, Minn.**



**For Any Car** **Easy to Install**

# Start Your Motor Instantly In Cold Weather

Dependable assurance of quick, easy starting, even on the coldest day of winter. That is what every motorist gains by equipping his car with an Imperial Primer—a necessity, not an accessory.

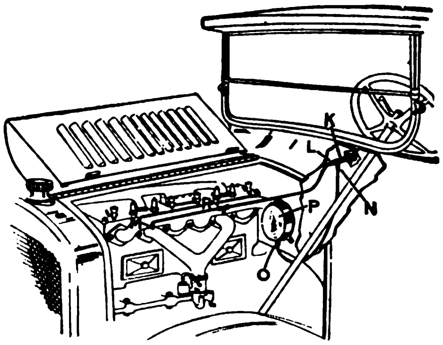
Thousands of satisfied users in all sections of the country would not be without one all the year around. The Imperial Primer is a guaranteed money and trouble saver for motorists; a profit-maker for every live dealer.

## Imperial Primer

## $6 Complete

Cold weather lowers the efficiency of even the best batteries. The quick starting, effected by the Imperial Primer, prevents the usual winter time drain on batteries and self-starters. This feature alone is worth many times the price asked.

This invaluable outfit consists of a small, substantially made plunger pump, auxiliary tank for high test gasoline, bolts, connections and tubing for any make of car. In operation, one upstroke of pump (K) draws in a small charge of gasoline from the auxiliary tank (P) and one down stroke shoots the charge, vaporized, into the manifold at (M) and (R). All connections are made by means of the well-known Imperial Compression Couplings, no soldering, flaring or threading being required.



**Dealers:** Our advertising in the Saturday Evening Post is creating desire for the Imperial Primer RIGHT NOW. See that you are sufficiently supplied. Write us, or your jobber.

**IMPERIAL BRASS MANUFACTURING CO.,**
517 S. Racine Avenue, Chicago, Ill.

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ELECTRIC GLUE POT

Mabey's Dry Heat Electric

## Glue Pot

No flame; no soot or smoke. All danger of fire is eliminated

| Capacity | Price without cover |
|---|---|
| 1 qt. | $ 9.50 |
| 2 qts. | 11.00 |
| 3 qts. | 12.75 |
| 4 qts. | 15.75 |

Century Automobile Cigar Lighter, Complete $1.00 Each, F. O. B. Indianapolis.

*DEALERS—Write For Prices.*

**MABEY'S ELECTRIC & MFG. CO.**
968 Ft. Wayne Avenue INDIANAPOLIS, IND.

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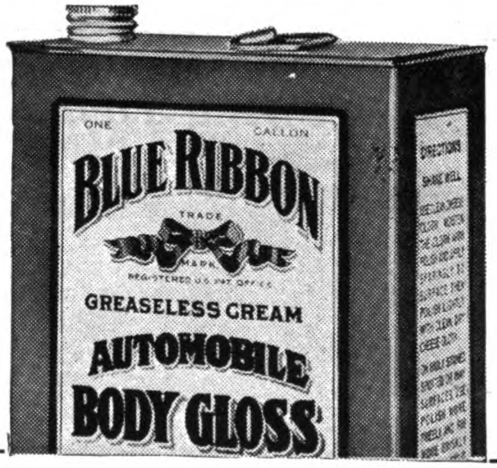

## Keeps the Body of Your Car *Shining* Like a Mirror

No Grease to Catch Dust—Does Not Coat the Finish—Best Furniture Polish Made—Use With SPRAY if Desired.

**International Metal Polish Co.**

INDIANAPOLIS, IND.

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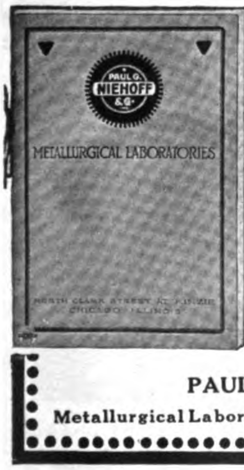
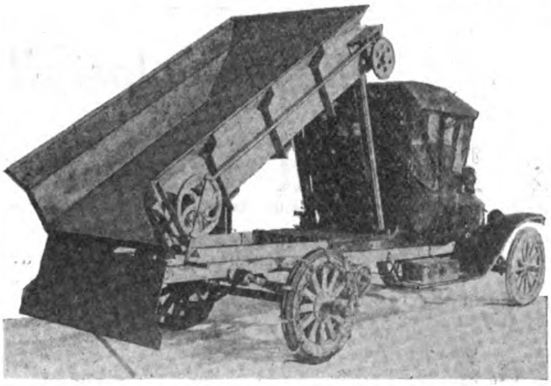


## Have you received your copy?

It is a *Book of Knowledge* that enables you to become an electrical expert in your automobile work. No more guessing at what you need. It is a complete illustrated catalog of contacts, starter and generator brushes. *Free* to every repair man. This is a line that will build up a splendid business. Ask about our Cash Register of contact parts proposition. Write today.

PAUL G. NIEHOFF & CO., Inc.
Metallurgical Laboratories Clark St., at Kinzie, CHICAGO, ILL.



SPECIAL FOR FORD ATTACHMENTS

**Quadruple Worm Gear Drive HAND HOIST**

**Speedy, Powerful, Light in Weight and very Efficient**

Price $206.25 for body and hoist complete ready to mount on chassis frame.

Bodies two sizes, capacity in pounds the same.

Size of the one cu. yd. body 96x44x12 in., straight sides only. Carrying capacity from 2700 to 3000 pounds of gravel, sand or crushed stone.

Size of the two cu. yd. body, 96x44x12 inches with flare of 6 inches. Carrying capacity from 2700 to 3000 pounds of soft coal.

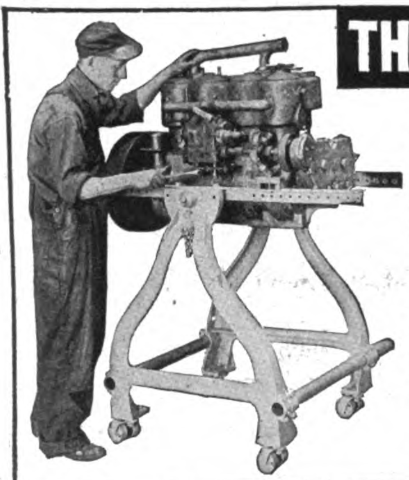
The retail price of either outfit is $206.25.

Approximate weight of either body is 550 pounds.

**Builders of Hoists ranging in capacity from one to five tons.**

***Ask for dealer's proposition***

THE AUGLAIZE MOTOR CAR CO.
New Bremen, Ohio



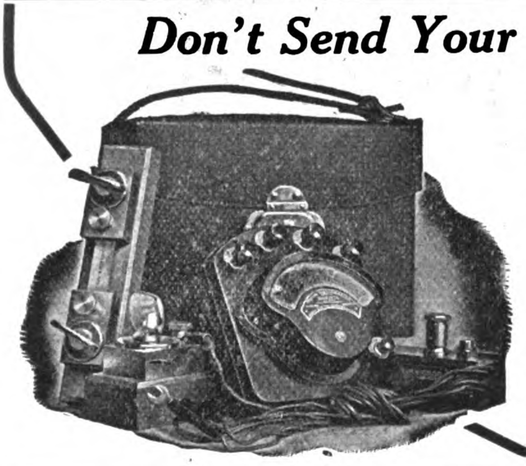
THE CONTINENTAL MOTOR STAND

WOULDN'T it be convenient if an automobile engine had every nut and bolt on a head where it could be reached instantly? There is no such engine, but the Continental Motor Stand does the next best thing. When an engine is mounted on it every part is accessible. It is the one piece of equipment that you need. It is indispensable—there are ten reasons why. Read them. Many of the leading manufacturers have equipped their assembly and service departments with Continental Motor Stands. It is going to pay you equally as well as it has paid them. Write today for prices and for booklet telling of the many uses of this adaptable repair stand.

**CONTINENTAL AUTO PARTS CO.,** KNIGHTSTOWN, INDIANA.

*Ten Reasons Why You Should Have It:*

1. Saves work and satisfies the workmen.
2. Saves time and satisfies the customers.
3. Simplifies imdividual or progressive assembling.
4. Renders every part of the engine accessible.
5. Fits any make of engine, any size.
6. Adjustable to any position.
7. Easily moved from place to place.
8. Requires but little floor space.
9. No projecting parts to interfere with work.
10. Every stand equipped to handle Ford engines.



***Don't Send Your Customers to Another Garage!***

If you cannot repair electric starting and lighting equipment intelligently, your customer will go elsewhere for this service. He will take the rest of his trade with him. There is more money in electrical repairs than in any other department of the garage business. The demand is enormously increasing.

Weston

**Model 280**

**GARAGE TESTING INSTRUMENT**

Is the best, the most reliable and therefore the cheapest electrical equipment for you. It enables you to promptly and accurately determine the condition of the electrical equipment of any automobile, just where the trouble is and just how to remedy it. Write for our **Special Proposition.**

**WESTON ELECTRICAL INSTRUMENT CO., 103 Weston Ave., Newark, N. J.**

*23 Branch Offices in the Larger Cities*

THERE'S JUST ONE WAY to fully realize what "Utility Varnish Renovator" will do for the GOOD of an automobile, and that is—TRY IT YOURSELF. We GUARANTEE it not to injure the finest varnish finish. Write us today for FREE SAMPLE.

**LIST PRICES**

| | | | |
|---|---|---|---|
| **Quart cans** | **$1.00** | **Twelve ounce bottles** | **50c** |
| **Gallon cans** | **3.00** | **Four ounce bottles** | **25c** |

**Sprayer 25c**

DO YOU HEAR the UTILITY KID signaling you to go ahead and get UTILITY VARNISH RENOVATOR

Manufactured by **POUGHKEEPSIE UTILITIES CORP.** 46 Winnikee Avenue
POUGHKEEPSIE, N. Y.

I Lubricate my Automobile
With SILCO.–Its Silent

FOUR GRADES:
Light, Medium, Heavy and Ford Special.
The Heavy Grade is Specially for
Heavy Duty Trucks.

SILCO is the perfect lubricant for transmission and differential gears. It possesses far greater lubricating properties than ordinary greases. It forms a positive and lasting cushion between all points of contact, and quiets noisy gears. Silco does not leak or drip, and its efficiency is unaffected by heat or cold.

SILCO minimizes friction, and eliminates expansion from heat, thus preventing undue wear on gears and bearings. Cuts repair bills and is guaranteed to afford entire satisfaction.

*Jobbers and Dealers: Our inducements are extremely liberal.*
*Send for further lubricating facts and special trade discounts.*

*WRITE TODAY TO*

**INTERNATIONAL LUBRICANTS COMPANY**

Manufacturers of SILCO Products

Home Office:
75 State Street, Boston, Mass.

New York Office:
51 East 42nd Street.

THE CONGDON & CARPENTER CO., Rhode Island Distributors, Providence, R. I.

AUTOMOBILE
SMOOTH SILCO AS SILK
LUBRICANTS

**LOOK FOR THIS TRADE MARK**

**IT PROTECTS THE DEALER AND CONSUMER**

**SILCO**

**TRANSMISSION AND DIFFERENTIAL GREASE**

**STOPS THE LEAKS**
**FINDS THE SQUEAKS**
**INSURES CAR SERVICE**

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# DO TIRE REPAIRING-

**as a separate business department of your Garage. Business easy to get, grows steadily, and pays well; only small capital required and opportunity everywhere. For best work and surest profits use**

## Akron-Williams

**TIRE REPAIR EQUIPMENT**

*Used and recommended by 60 Leading Tire Companies*
*Send for booklet No. 12 and catalogue on complete outfits for every size garage.*

**THE WILLIAMS FOUNDRY & MACHINE CO.**
**Ash Street, Akron, Ohio**

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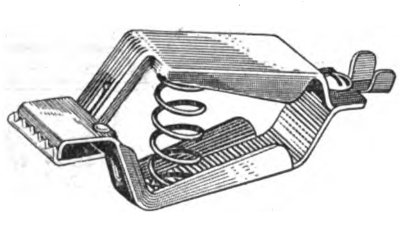
**Hook Up
Your
Batteries
With
Universal
Battery Charging
Clips**



They enable you to charge lighting and starting batteries without disconnecting them from the car.

**Made of steel—lead plated—may be used over and over again.**

**No. 31-A—1½" spread of jaws.**

Sample mailed postpaid for 15c in stamps.

Single Lots, Each 20c Lots of 10, Each 15c Lots of 100, Each 12 1-2c

**R. S. MUELLER & CO., 431 High Ave., S. E., Cleveland, Ohio.**

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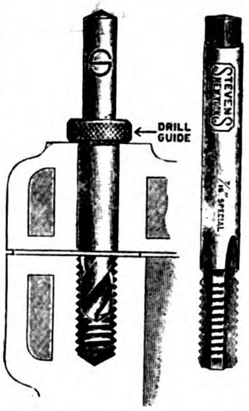
STEVENS & CO. NEW Y

## Every Repair Man

knows how difficult it is to remove threaded portions remaining in castings from broken cylinder heads and water connection bolts.

You can take them out easily with this
CYLINDER TAP AND DRILL SET FOR FORDS

You don't have to remove the head of the motor.



Special drill bushing guides drill through center of broken bolt, so that only small section of threads remains. Hole is then cleaned out with tap and is ready for new bolt.

**Bushing, Drill and Tap—packed in one box. List price $1.00.**

Ask your jobber for your discounts

**STEVENS & CO.**
375 Broadway
New York City

MANUFACTURERS OF
Automobile Parts & Accessories

(When Writing to Advertisers, Please Mention the Accessory and Garage Journal.)

# Push Your Business —

*I'll Show You How to Increase Your Winter Trade.*

THERE is business all around you. Good, profitable business that will bring in many an extra dollar. Don't wait for spring. Do business all winter. I'm helping garage men and supply dealers to do more business. I'll help you. Write on your business paper that you're ready for more business. I have nothing to sell but service backed by nine years' experience in promoting sales successfully.

*Write*

**Edward W. Bacon**
**BACON SERVICE**
**151 Grand St., New York**

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THE
BUELL
EXPLOSION
WHISTLE

**Proved Superiority Has Made This Signal Standard Equipment on the Following Trucks**

White
Master
Gabriel
Sandow
Lamson
Kimball
Pierce-Arrow
Little-Giant
Old Reliable
Palmer-Meyer
Hendrickson
Mack
Doane
Gary
Lemoon
Columbia
Wichita
Klemm
Fargo

**THE U. S. GOVERNMENT steadily increasing the number of Buell Explosion Whistles on trucks used in Post-office and War Departments.**

## THE BUELL EXPLOSION WHISTLE

Stands supreme. An entirely new type warning device. **Not an Exhaust Whistle.** But an **explosion** whistle. Screws in place of priming cup. Blown by direct explosion. Possesses widest tone range of all.

**Never Fails**—Can't clog. Nothing to get out of order. First low cost only cost. Most economical signal on the market.

A trial will convince **you** of its superiority.

Write for particulars.

***BUELL EXPLOSION WHISTLE CO.*** *1610 Michigan Ave. Chicago, Ill.*

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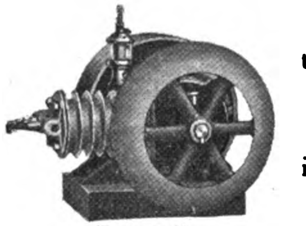
# THE GARAGE Compound Air Compressor

Two in One

Uses less power than ordinary Air Compressors and yet does not cost more.



(Patented)

If you are interested in Air Compressors it will pay you well to investigate this equipment.

**Manufacturers of Gas and Gasoline Engines.**
**Electric Farm Lighting Outfits. Ford Electric Lighting Systems.**

**TOLEDO GAS ENGINE WORKS,** 28-30 Ottawa Street, TOLEDO, OHIO

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# Save Money Now

By Hooverizing your

# GASOLINE

40% to 60% Increased Mileage

# K B C Hot Pin Manifold

Write Quick

**K. B. C. COMPANY**
**2015 Michigan Avenue, Chicago**

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# Attention!

**Truck and Delivery Car Distributors, Body Builders, Garage Owners, Accessory Dealers and Repair Men**

We wish to establish an agency in your locality for the sale of our

**BRASS SIGNS**
**for TRUCKS and DELIVERY CARS**

Liberal Commissions No capital required
Satisfaction guaranteed Write at once

**·C·H·BUCK·&·CO·Inc.**
401 Dorchester Avenue - - Boston, Mass.
ELECTRIC SIGNS FOR GARAGES

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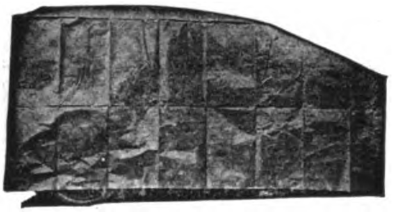

# KENNEDY AUTO STORAGE COVERS

Furnish efficient and economical protection for cars in dead storage. They are made of heavy, durable paper in standard sizes to fit any cars.

MADE ONLY BY

**THE KENNEDY CAR LINER & BAG CO.**
**SHELBYVILLE, IND.**

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# NEW DEPARTURE BALL BEARINGS

*Strength*
*Stamina*
*Service*

The New Departure Manufacturing Co., Bristol, Conn.
*Conrad Patent Licensee*

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# *The Automobile Journal*

A quality Magazine with prestige and circulation that brings results to advertisers.

TIMES BUILDING
PAWTUCKET, R. I.

Ambu Electric Trouble Shooter is an instrument which automatically detects and locates accurately and quickly trouble in any American made starting and lighting system used as standard on any American made cars—

and shows you ***what*** the trouble is and exactly ***how*** to repair it.

AMBU
VOLT AND AMPERE SCALE
ENGINE RUNNING
LAMPS OFF
ENGINE NOT RUNNING
LAMPS ON
ENGINE NOT RUNNING LAMPS OFF
A
B
C
VOLTS

# Good Electrical Repair Men Are Hard To Get

### AMBU Service Consists Of:

AMBU INSTRUMENT, and the following sets of master equipment charts, with their wiring diagrams, instruction and battery books:

1 **Autolite**
2 **Delco**
3 **Gray & Davis**
4 **Remy**
5 **Westinghouse**
6 **Splitdorf and Aplco**
7 **Bosch and Rushmore**
8 **Bijur Dyneto and Entz**
9 **North East and U. S. L.**
10 **Wagner, Detroit, Ward Leonard**
11 **Leece-Neville, Robbins & Meyers, Simms-Huff**
12 **Electro, Jesco, National**
13 **Adlake, Deaco, Esterline**
14 **Allis-Chal., Disco, Heinze**

Consultation service for one year from the delivery of AMBU. All additional wiring diagrams put out by us for one year from date.

The AMBU Trouble Shooting System consists of three parts, each of which is essential, and without any one of which the System would lose much of its value. These parts are:

1. AMBU—A combined ammeter and voltmeter, which has special patented features not possessed by any other instrument that has ever been made.
2. MASTER CHARTS—Books of instructions for the location of troubles which may arise in the electrical starting and lighting systems of gasoline automobiles.
3. 500 WIRING DIAGRAMS covering the complete wiring on the car.

The complete AMBU service contains information impossible for you to obtain in any other way—viz., showing internal hidden wiring connections rarely shown by the makers themselves—classified, systematized, readily accessible and filed in a handsome, substantial metal case with lock—a compact authoritative service.

### IT'S EASY TO GET

**AMBU** TRADE MARK

***Machines must do the work that men used to do***

Never has there been such a scarcity of men—yet repair work comes piling in and you must turn down job after job—many of them to your competitor.

If that's the situation that stares you in the face you can instantly change it by buying AMBU.

And with AMBU you can take care of all the electrical repairs on starting and lighting systems that come to you.

Better still, you can go out after more.

You can assure the car owner of prompt service and guaranteed repairs.

Why? Because with AMBU you become an electrical expert.

You have all the available information regarding every system and every car at your finger tips.

You have a wiring diagram of every system of every one of 500 makes of cars.

You have information telling you just how to correct every trouble on every one of those systems or every one of those cars.

AMBU—the Electrical Wizard—locates the trouble.

Accurately — automatically, quickly—when AMBU tells you what it is there is no further question.

You go right to the seat of the trouble—You don't tear the whole system apart, guessing what or where the trouble is.

You cannot afford — we might say you don't dare—to be without AMBU.

Car owners the country over are learning to seek out the AMBU shop for electric repairs.

Those shops are looked upon as standard—up to date and reliable.

Thousands are using AMBU Taking business away from the guessers—getting and holding satisfied customers.

Don't be one of the guessers.

**AMBUISE** your shop.

If our representative has not yet called upon you, write us and if he is near we will have him call.

At any rate let us send you convincing evidence of what AMBU is doing for thousands of other men in your business.

They are making money.

So should you.

**Write for the story—How I made a Success of a One Man Shop (With AMBU)—and other AMBU literature. Then you will quickly determine to make yours an AMBU Garage—**

### Good Reasons Why YOU Need AMBU

ELIMINATE WASTE.

Increases business.

More profit on electrical work.

Increased efficiency — can work on all systems.

Recommended by Gray & Davis, Willard, Exide, Hudson, Chalmers, White, King 8 and others of equal reputation.

On three jobs a week at $2.00 per job it will return $312 per year, or over 300% on the investment.

Saves time.

Does your thinking for you. Eliminates guess work.

Fills the place of the drafted man.

It gives in a condensed form the best expert brains of the country and an insight into the starting and lighting business that nothing else can.

It's the only positive way to locate trouble on starting and lighting equipments.

Hard to get good electrical men.

It gives a reputation as a master automobile electrician.

It will bring business to your shop thru the monthly AMBU test.

AMBU will make electrical repairs easy and profitable.

ADDRESS

**AMERICAN BUREAU OF ENGINEERING, Inc.**
**Automobile Department**
**1018-20 So. Wabash Avenue**
**Chicago, Illinois**

# Prest-O-Lite

## STORAGE BATTERY

*The Plate with a "Backbone"*

Dealers: It will pay you to investigate this better Battery. Write today for Special Literature or see the nearest Prest-O-Lite Service Station—Now!

**Not only a better battery but**

# Perfected Process Plates

QUICKER starts—longer life—greater staying power—the all-important standards of value to you in any storage battery—depend first of all on the plates, the real basis of the chemical action which creates electricity for starting, lighting and ignition.

In the great, modern Prest-O-Lite factories, experts have devised many new and efficient processes to insure you a better battery, and one of their greatest triumphs is the Perfected Process Plate—a distinct departure from previous plate-making practice—an established feature of all Prest-O-Lite Batteries.

Years of effort, research and expenditure stand back of this process.

The active, pasted material is seasoned by a new and different treatment which produces a super-hard center or "back-bone" of gradually increasing porosity as the surface is reached.

The super-hard center provides all the strength, stability and long life of the so-called "hard plate," but without the sacrifice of "pep" and power which is characteristic of all "hard plate" batteries.

The porous, super-sensitive surface, growing from the hard "back bone" or center, provides all the "pep" and power of the so-called "soft plate," but without the sacrifice of long life which is characteristic of all "soft plate" batteries.

In short, the two most desired extremes in storage battery performance—hitherto believed impossible of accomplishment—are provided by the process developed by Prest-O-Lite.

No other battery plates were ever made by this process.

The actual proof to you that "Prest-O-Lite" is a better battery is not only in this and many instances of better making, but in its remarkable records in service.

Manufacturers of representative cars in every class have adopted the Prest-O-Lite Battery as standard equipment. After close observation they have discovered a notable freedom from battery troubles among more than a half million users.

You can eliminate most of your battery troubles by getting a Prest-O-Lite Battery—the battery with the Perfected Process Plates. There is a correct size to fit your car. It will give you the utmost in satisfactory starting, lighting and ignition service.

No matter what make of car you own—no matter what make of battery you have—Prest-O-Lite Service is always ready to help you in the prevention of storage battery troubles. We will gladly test your battery, add distilled water and give you unbiased advice as to its care.

Prest-O-Lite Service Stations everywhere have service batteries for you to use when your battery needs repair. The Prest-O-Lite Service creed begins and ends with the words—"Satisfy the Owner."

## The Prest-O-Lite Company, Inc.

U. S. Main Office & Factory, 908 Speedway, Indianapolis, Ind.
Canadian General Office & Factory, Dept. L. 9 Toronto, Ont.

DIRECT FACTORY BRANCHES

Atlanta
Baltimore
Boston
Buffalo
Chicago
Cincinnati
Cleveland
Dallas
Davenport
Denver
Des Moines
Detroit
Indianapolis
Jacksonville
Kansas City
Los Angeles
Memphis
Merritton, Ont.
Milwaukee
Minneapolis
Montreal
New York
Omaha
Philadelphia
Pittsburgh
San Antonio
San Francisco
Seattle
St. Louis
St. Paul
Syracuse
Toronto
Winnipeg

*—and more than 800 specially appointed Prest-O-Lite Battery Service Stations in all parts of the country.*

**backed by Prest-O-Lite Service**

# Bursting The Bubble of False Claims with the Cold Steel of Fact

## AC Plugs Win Big Races

The manufacturers of AC plugs have kept pace with the growth of the motor industry, with the result that they are furnishing spark plugs that will stand the most excessive strain and give efficient service in high power aeroplane motors.

**Following We Give Some of the Performances of AC Equipped Cars:**

*Uniontown*—Billy Taylor, driving an AC equipped Stutz, won the Universal Trophy Race and with it the $10,000.00 Carl Laemmle Cup. Taylor's time for the 112½ miles was 89.9 miles per hour. T. P. Fetterman, driving an AC equipped Peerless, won the Dealer's race at an average speed of 82.6 M. P. H.

*Indianapolis*—E. G. Baker broke world's 24-hour Motorcycle record, using AC plugs. He covered 1386¼ miles, beating the old record by 232¾ miles. Not one second's plug trouble was experienced.

*Omaha*—Ralph Mulford in an AC equipped Hudson Super Six won the big race. Tom Milton in an AC equipped Duesenberg was second. In the 50 mile race AC equipped cars finished 2nd, 3rd and 4th.

*Uniontown*—Fetterman in a Peerless, AC equipped, won the Dealers' race, breaking all records with an average speed of 92 M. P. H. Vail, in an AC equipped Hudson, was second in the four-cornered match race, winning the longest heat of the race.

*Tacoma, Wash.*—Patterson in a Hudson Super Six, AC equipped, won the 150 mile Pacific Coast Championship Race, breaking the track record. Roades and Malcolm, both driving AC equipped Hudsons, finished third and fourth respectively.

*Minneapolis*—Ira Vail, in a Hudson Super Six Special, AC equipped, won the American Red Cross Derby at the Fort Snelling Speedway, average speed 96.30 miles per hour. Five of the eight cars that finished used AC plugs.

*Sheepshead Bay Speedway*—Joe Dawson in a Chalmers Stock chassis, equipped with AC plugs, covered 1898 miles in 24 hours, averaging 79.08 miles per hour, breaking previous 24-hour record, also previous 12-hour record.

*Sheepshead Bay Speedway*—Wm. A. Rader, driving an AC equipped Packard, made 10 miles in 4 min., 50.88 sec., an average speed of 123.76 M. P. H. The best previous record was 5 min., 19.78 sec., made at Brooklands, England.

In this matter of conflicting claims the average owner is completely puzzled. Which are true? Who is right? That's why we make no claims. We simply settle the confusion with the *facts* about

**AC Spark Plugs**

*The Standard Spark Plug of America*

There can be no better proof than these here given—the decision of America's leading engineers who equip with AC, and the remarkable records made on track and highway. These proofs *talk*.

Special types made for Fords, Maxwells, Overlands and Studebakers. Owners should not miss this way to get full results. On sale everywhere.

**Champion Ignition Company**
**Sole Manufacturers, Flint, Mich.**

*You have never had real Spark Plug satisfaction unless you use AC.*

## Manufacturers Equipping with AC

Cadillac
Pierce-Arrow
Packard
Marmon
Hudson
Chalmers
Hupmobile
Chandler
Haynes
Chevrolet
Dort
Cole
Reo
Paige
Peerless
Pilot
McFarlan
Paterson
Davis
Lexington-Howard
Scripps-Booth
Crane-Simplex
Stearns-Knight
Saxon
Stutz
National
Velie
Hatfield
American-La France
Old Reliable Trucks
Wilcox Trux
Republic Trucks
Four Wheel Drive
Buick
Oakland
Oldsmobile
Nash
Kissel Kar
Premier
Knox
Abbott
Pathfinder
White
Delco-Light
Murray
Case
Economy
Jordan
Liberty
Jackson
Apperson
Anderson
Phianna
Locomobile
Disbrow
Daniels
Westcott
Monroe
Singer
Stephens
Dodge Brothers
McLaughlin (Canada)
Dorris
Duesenberg
Henderson Bros
Gabriel Trucks
Netco Trucks
Sterling Trucks
Diamond T Trucks
Case Tractors
Federal Trucks
G. M. C. Trucks
Gramm-Bernstein Trucks
Menominee Trucks
Brockway Trucks
Wisconsin Trucks
Robinson Fire Trucks
Titan Trucks
Advance-Rumely Tractor
Moreland Trucks
Sandow Trucks
Signal Trucks
Samson Tractors
Acme Trucks
Maxim Trucks
Riker Trucks
Stewart Trucks
Lombard Tractors

# PISTONS FOR THE FORD

## REGULAR WEIGHT

Made of a close-grained grey-iron.

—

Grinding Finish

Complete with Rings, Pins and Bushings

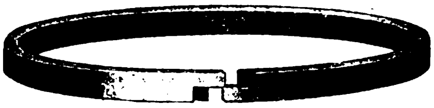
*Manufactured in Both Standard and Several Oversizes.*

*With or Without Bushings*

*Fitted with LAP JOINT Rings—a decided advantage over the diagonal cut usually furnished.*

**PRICE TO GARAGES AND DEALERS, $1.25 COMPLETE**

**When fitted with one TAYLOR RING on each piston $6.33 per set.**



## TAYLOR RINGS for FORDS

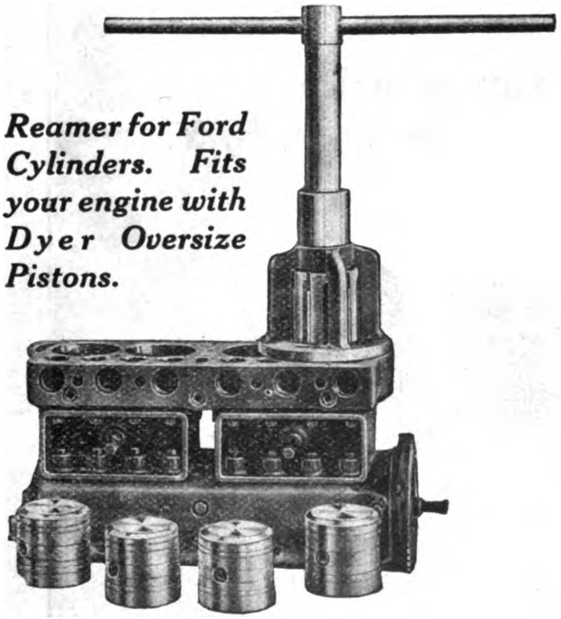
***In Standard and Oversizes***

A strong absolutely round, one-piece ring, carefully machined and ground to size. An eccentric ring with a joint which is actually leak-proof, compression-tight and which is designed to compensate for wear and yet be gas-tight and oil-tight when the joint is open 1-8 of an inch.

***STOPS*** Loss of Compression, Oil Throwing, Carbon Troubles.

***GIVES*** More Miles on Gas and Oil. Strong Continuous Service From the Motor.

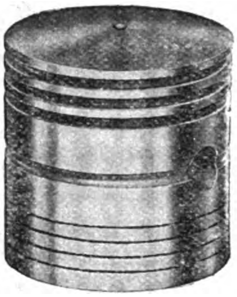
It is impossible for carbon to collect and force open the joint of the Taylor Ring which bears and wears uniformly at all points on the cylinder wall.



*Reamer for Ford Cylinders. Fits your engine with Dyer Oversize Pistons.*

## SPECIAL LIGHT WEIGHT

ONE Pound lighter than the Standard Ford Piston



Will not vary in weight more than TWO OUNCES

**REDUCES BY FOUR POUNDS THE WEIGHT OF RECIPROCATING PARTS**

Possesses all the advantageous features of alloy and aluminum pistons without their bad features, such as slapping, oil throwing, seizing and poor compression.

This piston is tough, durable, absolutely round, perfectly machined, has domed head, uniform walls, special oiling features and is accurately fitted with special lap joint rings.

**DECREASES** the crank shaft, wrist pin, connecting rod, piston and cylinder wear!

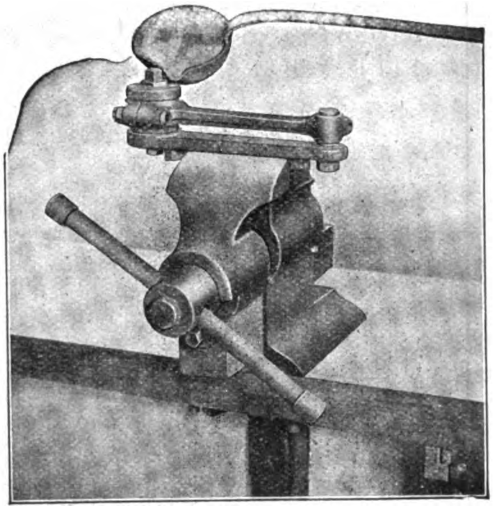
**INCREASES** the speed!

**INCREASES** the acceleration!

**DECREASES** the vibration of the car; the gasoline and oil consumption!

**DECREASES** the chances of a knock in the motor!

## REBABBITTING JIG



**For Ford Connecting Rod Bearings**

**WILL PAY FOR ITSELF IN THE FIRST JOB OR TWO**

**WRITE FOR COMPLETE CATALOGUE**

**THE G. H. DYER CO., - - Cambridge, Mass.**

Dyneto

# BECAUSE OF ITS

*Brilliant Light* *Comforts*
*Efficient power* *Dependability*
*Low Cost to run* *Durability*
*Labor Saving* *Quality*

*Service*

**The DYNETO Farm Lighting and Power Plant**
**is a necessity to every up-to-date farmer**

## DYNETO DOES DOUBLE DUTY

It lights the home, barns and outhouses with a clear, steady, brilliant light. It runs the vacuum cleaner, electric iron and fan, giving modern comforts in the home. It runs the separator, milks the cows, washes the clothes and churns the butter. The engine is one that every farmer understands. If you already have an engine the DYNETO PLANT can be attached to it and you save the difference in cost. The Generator and Switchboard are of the highest quality and fully guaranteed. The Batteries also have the greatest capacity of any on the market for the price. There is no mystery about running the DYNETO. It is SIMPLE, COMPACT, DURABLE, and you can learn to operate it in five minutes time.

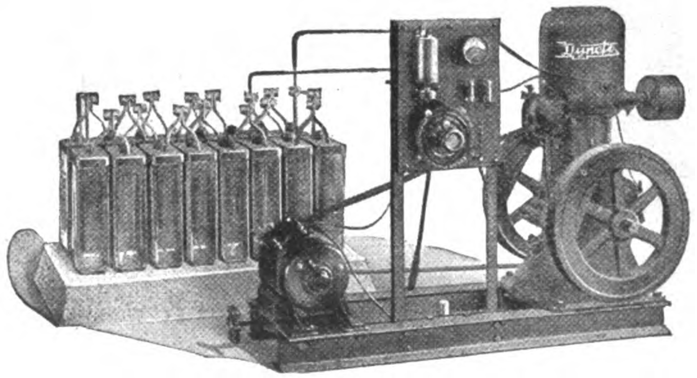
Write for a booklet which will give a full description of the outfit. Some valuable territory is still open for live wire dealers.

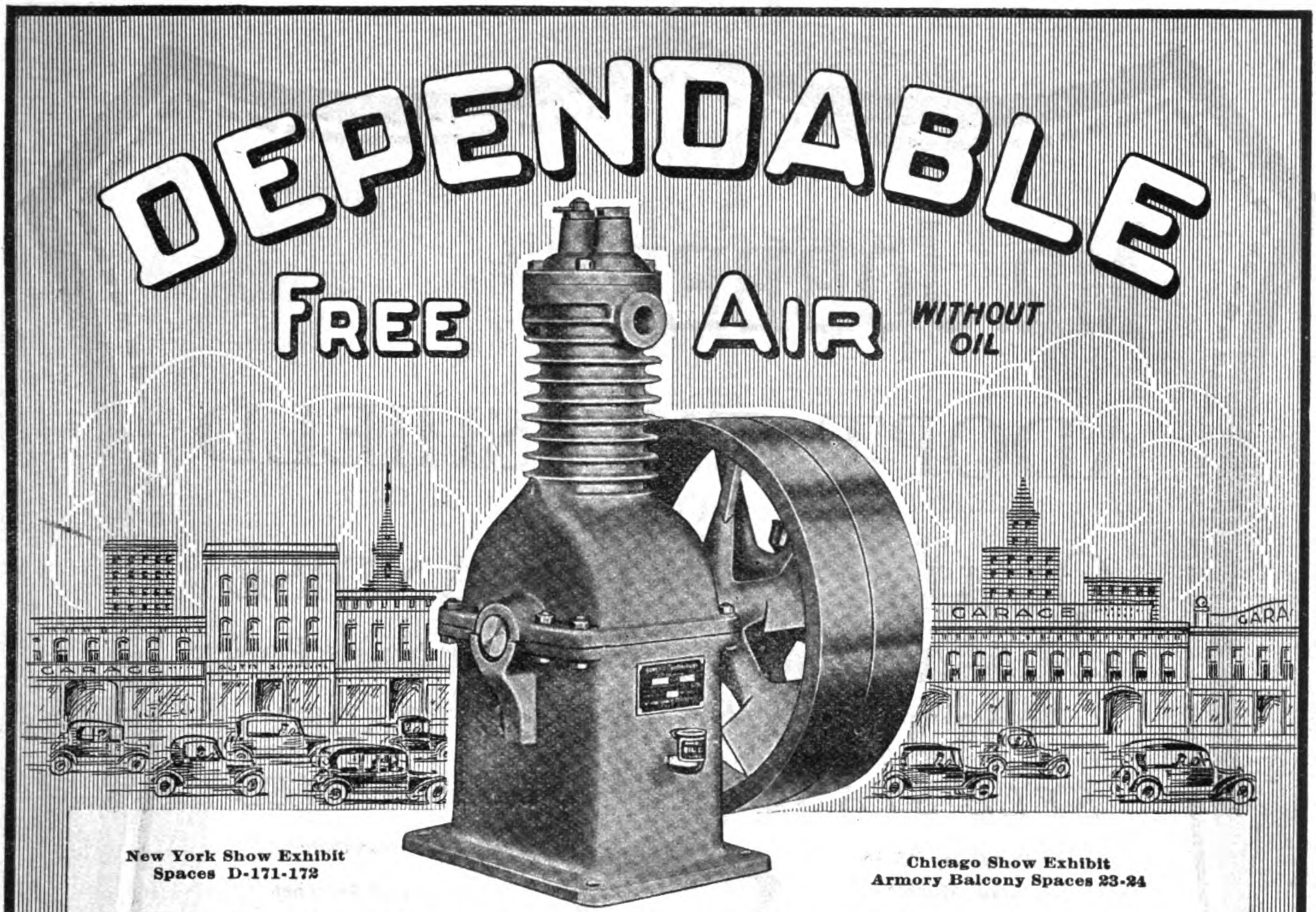
Fill out this coupon at once.

**Dyneto Electric Corporation**
**Wolf Street, Syracuse, N. Y.**

Name ...............................................

Address ...............................................





**New York Show Exhibit**
**Spaces D-171-172**

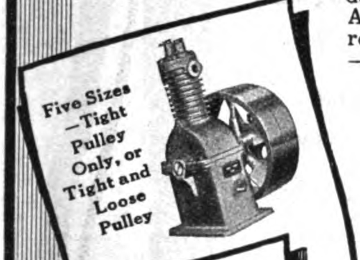
**Chicago Show Exhibit**
**Armory Balcony Spaces 23-24**

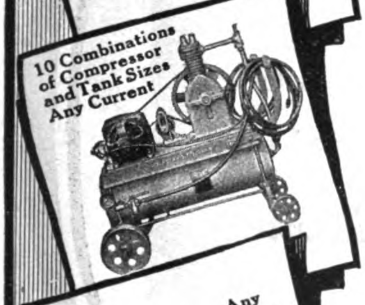
## Better Service Brings You More Trade

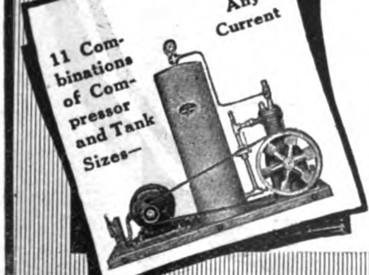
Auto owners have awakened to the fact that all Free Air Service is not alike. They are demanding PURE AIR for their tires because they have learned that oil rots tires and that AIR FREE FROM OIL means less blowouts, fewer punctures, greater tire mileage, less repairs and a great saving in up-keep every month. Cater to the demands of auto owners —give them what they want. Make your place the most popular in town by furnishing

# CURTIS AIR

## FREE FROM OIL







Curtis Compressors are the result of 25 years experience in the manufacture of high grade pneumatic machinery. They are reliable, dependable, require practically no attention, are economical to operate, guaranteed to stand up under the severest strains of hard usage and furnish a continuous supply of cool, pure, clean air. While others claim to furnish air free from oil, Curtis is the only Garage Air Compressor with the controlled splash oil system—**our own exclusive patented device** which prevents flooding the cylinder with more oil than it needs or can use—and eliminates all danger of forcing oil into the air line. Curtis Air is pure air—free from impurities—free from oil—the kind of air that makes tires last longer and pleases every patron.

## Curtis Compressors Pay For Themselves

They build business—hold your old trade—bring new patrons to your door—and by the superiority of your Free Air Service, create a feeling of confidence in the quality and reliability of your entire stock. And more than that—a Curtis Compressor will save you big money by supplying air for air hoists, painting, cleaning, vulcanizing, blowing dust and drillings from tools and serving you in many other ways.

## 5 Sizes—125 Combinations

There is a Curtis Compressor to meet the requirements of your business in every way —just the size, arrangement and price to please you. It will pay you to investigate. Ask your jobber—or cut out and mail us the attached coupon TODAY.

## Curtis Pneumatic Mach. Co.

**1621 Kienlen Ave., St. Louis, Mo.**

**Branch Office**
**531-A Hudson Terminal,**
**New York, City**

**Curtis**
**Pneumatic**
**Machinery Co.**
**1621 Kienlen Ave.**
**St. Louis, Mo.**

Gentlemen: Please send me full details on Curtis Air Compressors —your proposition and low prices.

Name.............................................................

Address.............................................................

Jobber's Name.............................................................

Address.............................................................

# MR. JOBBER-

# ADOPT THE SHIELD OF QUALITY MERCHANDISE

*Have the Actuating Slogan of Your Sales Policy*

"FOR THE GOOD OF THE TRADE"

***SELL STANDARD ACCESSORIES***

*We Own, Make and Market*

**"FAWSCO" Brands**

- Auto Crawlers
- Ignition Wiring Assemblies
- Lamp Electrifiers
- Oil Cock Wrenches
- Lennon Light Protectors
- Red Seal Spark Plugs

1
9
1
8

*We Distribute*

- Connecticut Switches
- Culver-Stearns Electric Specialties
- Eureka Valve Grinding Compound
- Fitzgerald Mfg. Co. Gaskets, etc.
- Ideal Hose Clamps
- Tungsol Auto Lamp Bulbs
- Walden-Worcester Wrenches

Automobile Fuses

Goods of Known WORTH and RECOGNIZED VALUE.

BUY From THOSE WHO HELP YOU HELP YOURSELF.

---

*See us in Space D-93, New York Show*

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## J. H. FAW, Inc.

**Distributing-Sales Specialists in Automobile Accessories**

41 WARREN ST. NEW YORK

# Stops Ford chatter grab and slip

That noisy chat-t-er-ing when you work the Ford brake is more than a nuisance. It means hard, slippery brake linings—waste motion—lost "pull"—car ruining vibration.

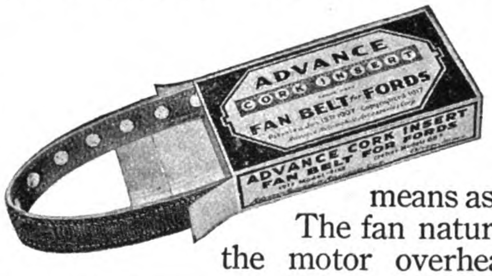
## ADVANCE CORK INSERT

TRADE MARK REG. COPYRIGHTED 1917.

## TRANSMISSION LININGS FOR FORDS

stop the chattering because they stop the grab and slip. The buttons of cork never become smooth or hard. Both corks and fabric wear very slowly. One set outwears three sets of ordinary linings.

Cork Insert Transmission Linings make the Ford brake ***brake***—make the car "pull" better and haul heavier truck loads—get ***instant action*** in response to a mere touch to the pedals—give "pep" in the get-away, put positive action in the brake.



## Stops Fan Belt Slipping

The ordinary Ford fan belt soon gets "slippery as an eel." That means as high as 25% to 50% lost power. The fan naturally doesn't fan as it should—the motor overheats because it isn't properly fanned—and there's trouble to pay. ***Most*** motor trouble, in fact, results from overheating.

***Cork Insert Products*** *will be exhibited at the* ***New York Show, Space D-3***

Cork Insert Fan Belt stops slipping throughout its long service. The buttons of cork hold their ability to grip—not affected by water, oil, grease or dirt. Better service, longer wear, greater economy.

### PRICES

**Cork Insert Transmission Linings $3 per set of 3**

**Cork Insert Fan Belts, $1 for 1917 Fords, 85c for preceding models**

**DEALERS** Order Cork Inserts from your jobber. Cork Inserts are one of the biggest successes of the year in the trade. Every Ford has to have transmission linings and fan belts. Cork Inserts do the work better—last longer—save money. They are strongly advertised. They certainly do *move* and keep profits rolling in.

**Advance Automobile Accessories Corp.**
Dept. L3-1 56 E. Randolph St.
Chicago, Illinois

**Dealer's Coupon** Check and mail today

ADVANCE AUTOMOBILE ACCESSORIES CORP.,
Dept L3-1, 56 E. Randolph St., Chicago.

☐ Send one dozen sets of Advance Cork Insert Transmission Linings for Fords.

☐ Send one dozen Advance Cork Insert Fan Belts, 1917 Ford.

☐ Send one dozen Advance Cork Insert Fan Belts, 1916 or earlier model Ford.

(Regular dealer discounts to apply)

Name ........................................

City .................................... State ..................

Jobber's Name ........................................

C S MFG. CO.

# PRODUCTS on all "Tiffany" Cars

From the beginning C-S products have been manufactured under high ideals of quality. And these ideals have been adhered to in practical manufacturing for it was early realized that to maintain leadership, a product must have quality in every part.

The result—high quality in every part became recognized—C-S products grew in favor. The automobile owner wants the best; the automobile manufacturer cannot muster up courage to advertise his equipment anything short of this; that is why you find C-S products on "First Class" cars.

## THESE CARS USE C-S PRODUCTS

Abbott Corporation
Allen Motor Co.
American La France Fire Engine Co.
Anderson Motor Co.
Apperson Brothers
Auburn Automobile Co.
Briscoe Motor Corp.
Buick Motor Co.
J. I. Case T. M. Co.
Chalmers Motor Car Co.
Chandler Motor Car Co.
Crane-Simplex
Crawford Automobile Co.
Dodge Bros.
Dorris Motor Car Co.
Empire Automobile Co.
Ford Motor Co.
Four Wheel Drive Auto Co.
H. H. Franklin Mfg. Co.
Harroun Motors Corp.
The Haynes Automobile Co.
Hupp Motor Car Corp.
Jackson Automobile Co.
Jordan Motor Car Co.
Lexington-Howard Co.
Liberty Motor Car Co.
The Locomobile Co. of America
Maibohm Motors Co.
Maxwell Motor Car Co.
McFarlan Motor Co.
McLaughlin Motor Car Co.
Mercer Automobile Co.
Metz
Monroe Motor Co.
Moon Motor Car Co.
The Murray Motor Car Co.
Nash Motors Co.
Oakland Motor Car Corp.
Olds Motor Works
Olympian Motors Corp.
Owen Magnetic
Packard Motor Car Co.
The Pierce-Arrow Motor Car Co.
Reo Motor Car Co.
Saxon Motor Co.
Simplex Automobile Co., Inc.
Studebaker Corporation
Velie
Willys-Overland Co.

## CULVER-STEARNS MFG. CO.

**Detroit, Michigan** **Worcester, Mass.**

**SALES AGENTS**

*Manuel Bergman, New York*
*Brown & Caine, Chicago*
*M. A. Bryte, San Francisco*
*J. H. Faw, Inc., Atlanta, Ga., and New York*

92-7

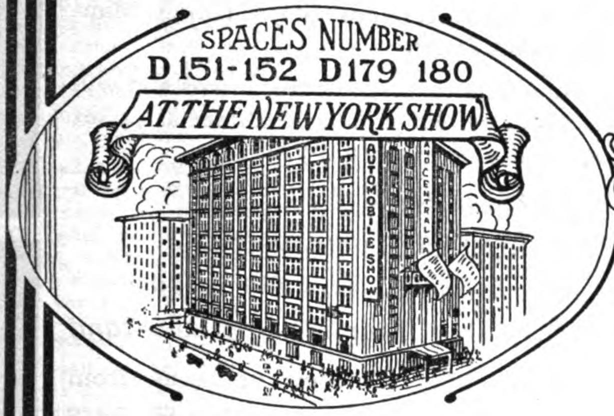
# BRUNNER

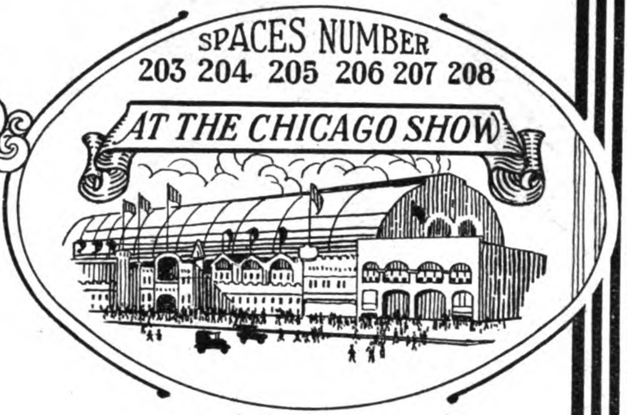
## The Brunner Garage Air Compressor

**WILL BE EXHIBITED AT BOTH THE**

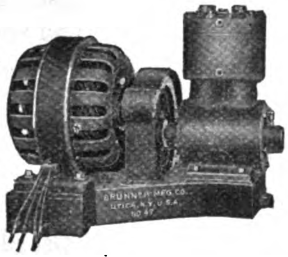
## NEW YORK AND CHICAGO AUTOMOBILE SHOWS

***MAKE A NOTE OF THE SPACE NUMBERS***


SPACES NUMBER
D151-152 D179 180
AT THE NEW YORK SHOW
AUTOMOBILE SHOW
GRAND CENTRAL PALACE


SPACES NUMBER
203 204 205 206 207 208
AT THE CHICAGO SHOW

## INVESTIGATE THE BRUNNER AIR COMPRESSOR


BRUNNER MFG. CO.
UTICA, N.Y. U.S.A.

Every Motorist, Garageman and Jobber attending the New York and Chicago Automobile Shows will find it to his interest to visit the Brunner exhibit and should not fail to grasp the opportunity to become better acquainted with the use of compressed air for tire service.

**The motorist interested in the proper care of his tires will find our engineers anxious to give him advice regarding the proper use of compressed air for tire service. The Garageman, whether he is a user of Brunner Equipment or not, will find our engineers ready and willing to assist him in solving his compressed air problems.**

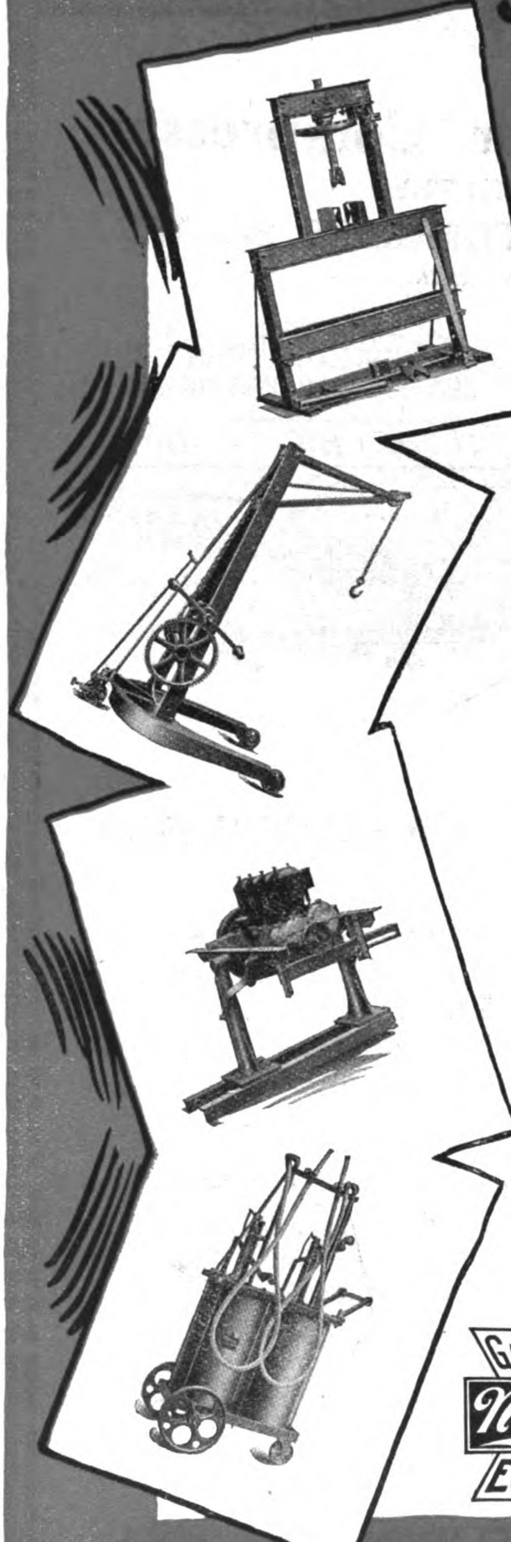
***The Jobber will find our Sales representatives ready to explain the Brunner Sales Plan for 1918. We extend you a cordial invitation.***

## BRUNNER MANUFACTURING CO.

***Main Office and Plant:***
**UTICA,**
**N. Y.**

***Cincinnati Branch:***
**419 First Nat'l Bank Building**
**CINCINNATI, OHIO**

# These Money Makers For Prizes at the Auto Shows



EVERY garage man visiting our exhibit at either the New York or Chicago Show will be given an opportunity to get some of the famous Manley Garage Machines **free.**

We will conduct a contest at both shows and will give away four of our most popular machines as prizes to the winners. These prizes will be:

*One Manley 22-ton Press*
*One Manley 1-ton Portable Crane*
*One Manley 2-tank Oil Service*
*One Manley Engine Stand*

The contest at either Show will be distinct from the contest held at the other. Every visitor can have a chance on all four machines given away at the show which he attends.

Manley equipment is designed and built especially for garage service and conditions. These specialties have been proven great time and labor savers for garage work in all parts of the country. You should be interested in seeing this line and learning how it will enable you to make money in your business.

**Our exhibit will be located as follows:**

**Chicago Show Space, 10-D, Coliseum Basement.**

**New York Show, Space D-198, 4th Floor, Grand Central Palace.**

Look us up and remember you may be lucky enough to win the very machine you like best. Don't forget the contest will be on at both shows.

GARAGE & SHOP
Manley
EQUIPMENT

**United Engine & Mfg. Co.**
Hanover, Penna.

# Four Manley Machines To Winners at Each Show

## WAR TIME ECONOMY USE GOODS OF PERMANENT QUALITY

# PEERLESS AUTOMOBILE SPECIALTIES

## *Make Old Cars Look Like New*

### USED BY OVER 8000 AUTOMOBILE PAINTERS THROUGHOUT THE WORLD

**PEERLESS MOHAIR TOP DRESSING.**

Waterproofs, dresses and dyes mohair, duck and canvas tops and curtains like new. Dries over night, leaving top soft and pliable. About one quart to dress a five-passenger car top.

**PEERLESS LEATHER TOP DRESSING.**

An oil dressing to renew the finish and keep rubber, leather and pantasote tops and curtains soft and pliable. Dries over night. Not for seats or cushions. About one quart to dress large five-passenger top and curtains.

**PEERLESS FORD TOP DRESSING.**

A dressing made for Ford Top Material, making a rich black gloss finish, adding life and color to old tops. Dries over night, wears indefinitely. About one pint for a runabout top; one quart for a touring car top.

**PEERLESS CUSHION DRESSING.**

Without danger of washing or rubbing off, it brightens and renews the finish of leather seats and cushions. Dries in 30 minutes. About one pint for small car and one quart for large car.

**PEERLESS LAMP ENAMEL—GLOSS AND DULL.**

A rich finish for brass, nickel or iron. One coat covers over metal or old enamel. Air drying over night.

**PEERLESS CYLINDER ENAMEL—BLACK AND GRAY.**

A rich gloss enamel that saves cylinders and all metal engine parts from rusting. Not injured by heat, grease or gasoline. Air drying over night.

**PEERLESS FENDER JAPAN—JET BLACK.**

Made especially for coating fenders and hoods with a rich black gloss enamel. Air dries and has a finish like a baked job. Dries in 24 to 36 hours. About one quart to coat fenders of a small car.

**PEERLESS BLACK JAPAN—EXTRA FINE.**

A rich gloss air drying enamel for touch-up and all-around use on wood and metal parts of automobiles. One coat covers solid and dries over night.

**PEERLESS MIRROROID.**

A varnish renewer to be applied to varnished surfaces that have lost their lustre and become dull through use. Dries over night with a fine lustre that will wear for months. One pint to a quart to finish an automobile.

**PEERLESS GASKET SHELLAC.**

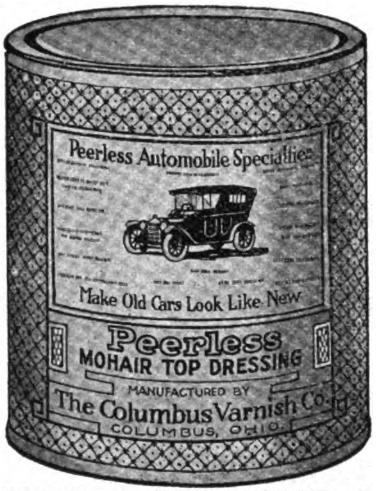
A strictly high grade shellac for gaskets, cork carburetor floats and such parts on an automobile. This is a high grade product cut in pure alcohol. It is not affected by gasoline.

**PEERLESS LINING DYE.**

A powerful black dye that dyes all cloth lining a black uniform color over stains and faded parts alike. Dries in two to three hours. About one quart to dye inside of five-passenger car top.

### —THE PACKAGE—

LITHOGRAPHED SILVER, RED and BLACK



**PEERLESS COLOR FINISHING VARNISHES.**

The idea of an owner wanting to paint the body, wheels or chassis of his automobile his favorite color is now realized by the use of these products. The work can be done at home. The goods will cover solid with one coat and dry satisfactory over night. Very durable products. Made in eight colors.

**STRAW COLOR**
**MEDIUM YELLOW**
**RED**
**ROYAL AUTO BLUE**
**GRAY**
**BREWSTER GREEN**
**BLACK**
**WHITE**

**PEERLESS TIRE PAINT.**

A white waterproof coating for tires containing nothing injurious to rubber and keeps tires looking bright and new. One pint will cover five regular casings.

**PEERLESS RIM PAINT—ANTI-RUST.**

A protective coating for automobile rims, to allow tires to be removed with ease and keep them from rusting. Dries in four to five hours. About one pint for rims of small car.

**PEERLESS LIQUID WAX.**

A wax polish for all varnished surfaces of automobiles. In liquid form so that it is easily applied in a light, even coat. Polished with ease and ready for use at once. Does not collect dust and is not injured by water. One pint will polish a large car.

**PEERLESS AUTO BODY POLISH.**

A varnish food to brighten and renew the appearance of all varnished surfaces on an automobile. Applied and polished ready for use in a very few minutes. About one pint will polish a car.

**PEERLESS BATTERY BOX BLACK—ACID PROOF.**

An acid proof coating for wood and metal that comes in contact with acid and fumes from batteries. Keeps acid from destroying wood and metal.

**PEERLESS CARBON REMOVER.**

A liquid effectually removing deposits of carbon from cylinder of automobile motors. One ounce used in each cylinder about every 500 to 1000 miles keeps your motor full of life and eliminates the carbon knock.

**PEERLESS ANTI-FREEZE.**

Insurance against frozen radiators, made of sufficient strength so that equal parts of anti-freeze and water in the cooling system of an automobile will be sufficient protection at a temperature of about 15 degrees below zero.

### SPECIAL NOTICE FOR DEALERS AND GARAGES

For your special convenience we have listed our complete line of **Peerless Automobile Specialties** here so that at all times you will have your catalog before you. It will always be a pleasure to sell goods to your particular customers, that are made by an old reliable manufacturer, who takes pride in making fine goods. See our 1918 catalog.

USE THESE GOODS FOR 1918 AND HAVE PLEASED CUSTOMERS

***Used throughout the world by owners, garages and automobile painters***

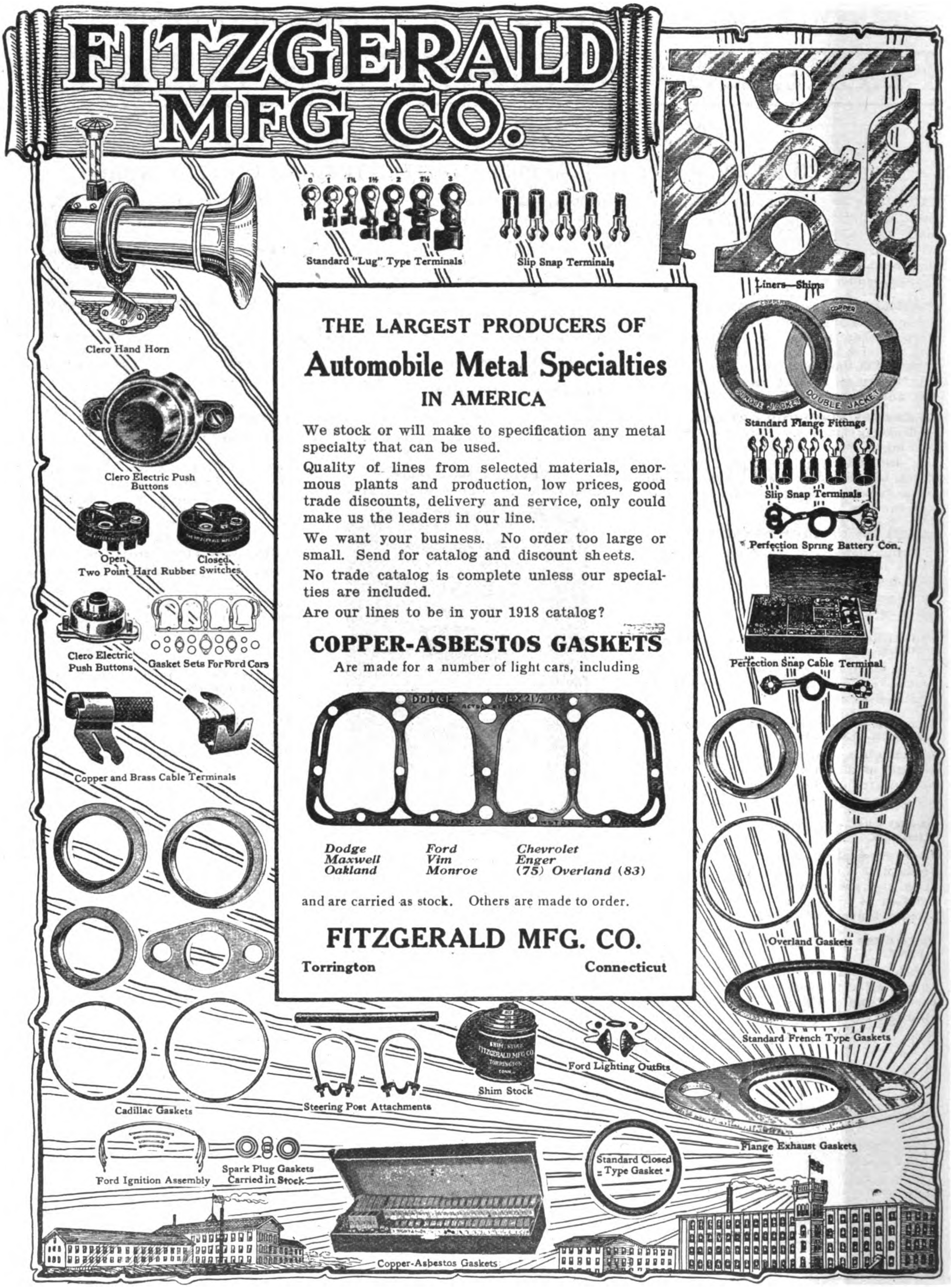
THE FINEST GOODS IN THE FINEST LITHOGRAPHED PACKAGE

**For Detailed Literature Write Any Jobber of Hardware or Auto Supplies.**

## The Columbus Varnish Co., Columbus, Ohio

### Sole Makers

**(When Writing to Advertisers, Please Mention the Accessory and Garage Journal.)**


FITZGERALD
MFG CO.
0 1 1¼ 1½ 2 2½ 3
Standard "Lug" Type Terminals
Slip Snap Terminals
Liners—Shims
Clero Hand Horn
COPPER
SINGLE JACKET
DOUBLE JACKET
Standard Flange Fittings
Clero Electric Push Buttons
Slip Snap Terminals
Perfection Spring Battery Con.
Open
Closed
Two Point Hard Rubber Switches
Clero Electric Push Buttons
Gasket Sets For Ford Cars
Perfection Snap Cable Terminal
Copper and Brass Cable Terminals
Overland Gaskets
Standard French Type Gaskets
Shim Stock
Ford Lighting Outfits
Cadillac Gaskets
Steering Post Attachments
Flange Exhaust Gaskets
Standard Closed Type Gasket
Ford Ignition Assembly
Spark Plug Gaskets Carried in Stock
Copper-Asbestos Gaskets

THE LARGEST PRODUCERS OF

**Automobile Metal Specialties**

IN AMERICA

We stock or will make to specification any metal specialty that can be used.

Quality of lines from selected materials, enormous plants and production, low prices, good trade discounts, delivery and service, only could make us the leaders in our line.

We want your business. No order too large or small. Send for catalog and discount sheets.

No trade catalog is complete unless our specialties are included.

Are our lines to be in your 1918 catalog?

**COPPER-ASBESTOS GASKETS**

Are made for a number of light cars, including

| | | |
|---|---|---|
| *Dodge* | *Ford* | *Chevrolet* |
| *Maxwell* | *Vim* | *Enger* |
| *Oakland* | *Monroe* | *(75) Overland (83)* |

and are carried as stock. Others are made to order.

**FITZGERALD MFG. CO.**

**Torrington** **Connecticut**

*Bill posting will play an important part in putting Conaphore before the public in 1918.*

CONAPHORE
THE SCIENTIFIC HEADLIGHT GLASS
GIVES 500 FOOT RANGE
PIERCES FOG AND DUST
CORNING CONAPHORE
U. S. PATENTS ISSUED & PENDING
Motor Life
McCLURE'S
THE WAR IN PICTURES
Collier's
The Literary Digest
THE SATURDAY EVENING POST
HOARD'S DAIRYMAN
THE BREEDER'S GAZETTE
The COUNTRY GENTLEMAN
MICHIGAN FARMER
23 State Farm Papers

*These leading Magazines will carry the story of the Conaphore all through next year.*

The Conaphore
*Smooth front surface. Easily cleaned. Does not clog with dust, mud or snow.*

*These farm journals will give rural car owners the complete story of the Conaphore in 1918.*

# 1918 Advertising Announcement

***Conaphore campaign strongest ever put behind an automobile headlight glass***

Our 1918 advertising will make Conaphore the best known headlight glass on the market—not only to city, but to rural car owners as well.

We are using two-color, full page advertisements once a month in the Saturday Evening Post. We are using full page ads. in Collier's Weekly, Literary Digest, Leslie's Weekly, and Scientific American; also large space advertising in McClure's and the American Magazine.

### Big farm paper campaign

We are reaching the rural car owner by an extensive campaign in national and state farm papers. And of course we are advertising heavily in the leading motor publications. The combined circulation of this list totals more than 7,000,000.

The surface of the headlight glass market has hardly been skimmed. Our 1918 advertising campaign is bound to open new and wide fields for profitable business. It will dominate the headlight glass market in every section of the United States and Canada. It will create sales for Conaphore dealers throughout the entire year.

Consider the merits of the Conaphore. Note the advertising backing we are giving this remarkable headlight glass. Then decide whether or not you want some of this profitable 1918 business.

### Investigate the Conaphore at the New York Show

**Space D-106 will be Conaphore headquarters at the New York Automobile Show, January 5-12, at Grand Central Palace.**

**Call on us and we will demonstrate exactly why the Conaphore is the most efficient automobile headlight glass.**

**We will also show you in terms you can't mistake just why the Conaphore is a paying proposition for you to handle in 1918.**

***Manufactured by the world's largest makers of technical glass***

**CONAPHORE**

**Range 500 feet—No glare—Pierces fog and dust**

### Notice to jobbers

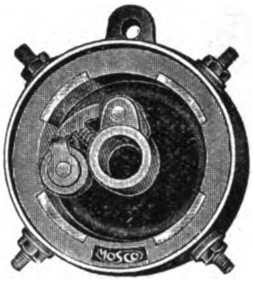
If you are among the few who are not handling Conaphores, get in touch with us at once. The Conaphore proposition is sure to interest you. Write us today.

### Notice to dealers

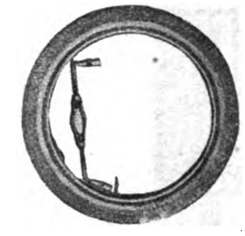
Our sales records show a brisk winter demand for Conaphores right now. Secure your share of Conaphore profits. We furnish every co-operation—sales leaflets, display charts, and advertising electros. To insure prompt delivery, get your orders on your jobber's books as quickly as possible.

For special information write to your jobber or direct to us.

CONAPHORE SALES DIVISION
**Edward A. Cassidy Co., Inc., Managers**
**Madison Ave., and 40th St., N. Y. C.**
CORNING GLASS WORKS



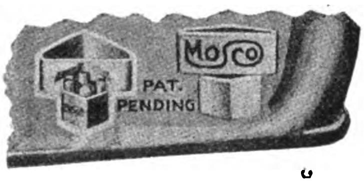
FORD MOSCO TIMER.



DEMOUNTABLE RIM TOOL.

MOSCO VALVE GRINDER.

STEERING ROD ANTI-RATTLER.



SOCKET NUT AND BOLT HOLDER.

The trade mark "Mosco" is a guarantee and a protection to the jobber, the dealer and the consumer, for it insures that quality and satisfaction that increases business and repeats orders.

No stock is complete without "Mosco" specialties. The sales are developed and demand created by a great national advertising campaign.

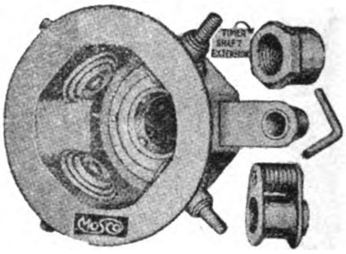
The market now exists for "Mosco" products and this will be steadily promoted the coming year wherever motor vehicles are used in U. S. A. and Canada.

In addition to the standard "Mosco" products we will display a number of new and improved specialties, all highly developed and perfected, and absolutely superior to anything obtainable.

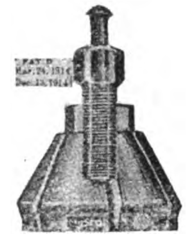
**Some of the 1918 "Mosco" Specialties**

"Mosco" Ford Timer.
"Mosco" Steering Rod Anti-Rattler.
Improved Bemus Timer.
"Mosco" Floating Plunger Wheel Puller.
"Mosco" Valve Grinder.
"Mosco" Socket Nut and Bolt Holder.
"Mosco" Demountable Rim Tool.
"Mosco" Valve Spring Compressor.

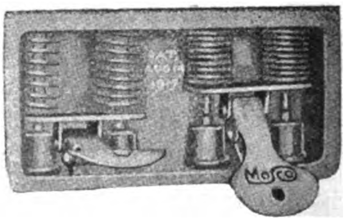
**Your Jobber Has Them In Stock**



IMPROVED BEMUS TIMER.



MOSCO FLOATING PLUNGER WHEEL PULLER.



MOSCO VALVE SPRING COMPRESSOR.

***The "Mosco" 1918 catalogue and trade discount sheets are now ready for distribution***

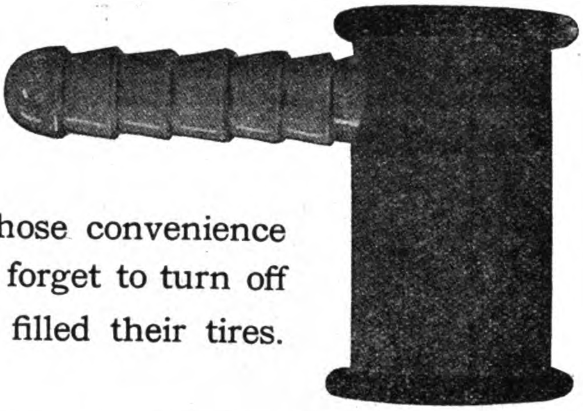
**JOBBERS:** You are cordially invited to attend a special display of "Mosco" Specialties—equipment and tools—at the Astor Hotel, New York City, during the progress of the New York Automobile Show

## MOTOR SPECIALTIES COMPANY

WALTHAM MASSACHUSETTS

# Garage Men!

## FREE AIR
## COSTS MONEY



when the customers for whose convenience you provide an air station forget to turn off the flow after they have filled their tires.

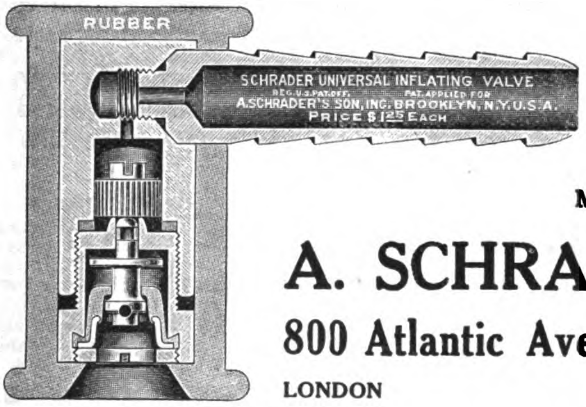
*Guard against this waste by attaching a*

## SCHRADER AUTOMATIC INFLATING VALVE

*to your air hose*

The Schrader Inflating Valve automatically locks the bottled air into the tank the minute it is taken off the tire valve. You turn on the air by pressing the nozzle of the inflating valve against the tire valve, and you turn it off by removing the device from the tire valve.

It is made to fit any diameter stock sizes of hose, from one-quarter inch to five-eighths.


RUBBER
SCHRADER UNIVERSAL INFLATING VALVE
REG. U.S. PAT. OFF.
PAT. APPLIED FOR
A. SCHRADER'S SON, INC. BROOKLYN, N.Y. U.S.A.
PRICE $1.25 EACH

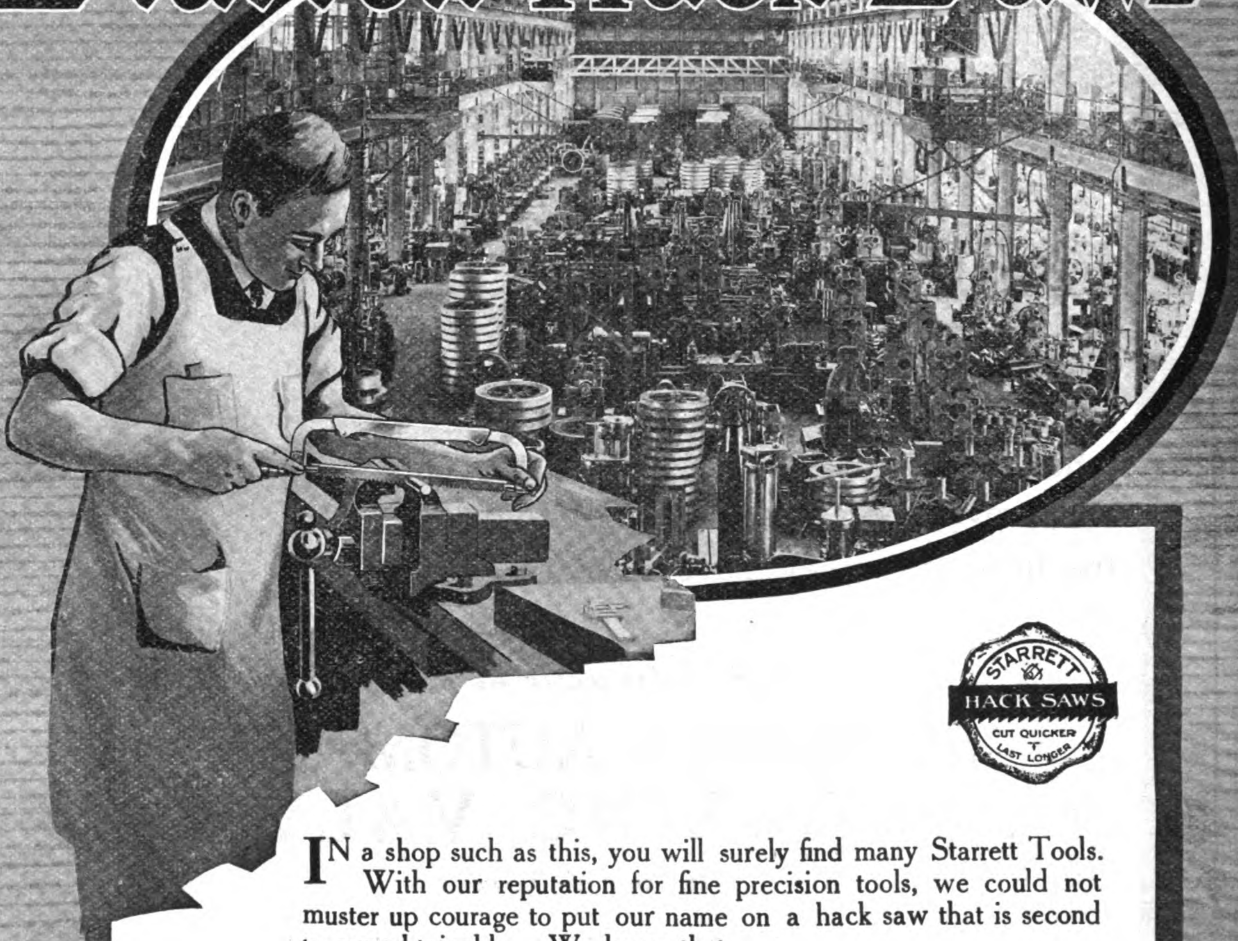
PRICE IN U. S. A.

**$1.25**

Manufactured by

**A. SCHRADER'S SON, Inc.**
**800 Atlantic Avenue, Brooklyn, N. Y.**
LONDON CHICAGO TORONTO

# Starrett Hack-Saws



STARRETT
HACK SAWS
CUT QUICKER
LAST LONGER

IN a shop such as this, you will surely find many Starrett Tools. With our reputation for fine precision tools, we could not muster up courage to put our name on a hack saw that is second to any obtainable. We know that

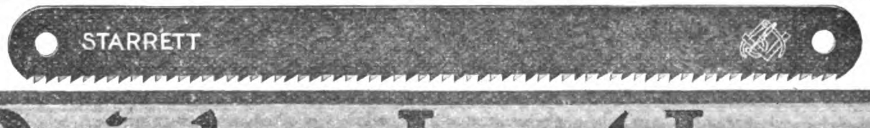
## Starrett Hack Saws Are Unexcelled Just As Starrett Tools Are Unexcelled

We make them in our own shops; in the same plant with Starrett Tools. We know what steel they are made of. We know what they will do, for we test saws all the time under known conditions. With us it is test, test, test—to find out for you just what constitutes the best saw for this work or for that.

There is no question about the quality of Starrett Hack Saws. The only question is what numbered saw to use and this question is easily answered by referring to page 208 of our catalog No. 21GT which shows what saw to use for any particular work.

**The L. S. Starrett Co.**
The World's Greatest Toolmakers
ATHOL, MASS.

42-748



## Cut Quicker-Last Longer

The ACCESSORY and GARAGE JOURNAL
Devoted Exclusively to the Automobile Trade and Allied Interests.

VOL. VII. PAWTUCKET, R. I., DECEMBER, 1917 No. 8

# *New York Show Beckons Accessory Dealers*

MOTOR accessory dealers, sometimes and with good reason estimated as the busiest people of the industry, will find inspiration and profit in the National Automobile Show, to be held in the Grand Central Palace, Jan. 5 to 12. The show has close to one-fifth of the entire motor accessories and parts industry represented among the exhibitors, providing the most comprehensive display of the modern devices that have been designed to add comfort, convenience and economy to the motor car owner.

Nobody in the motor trade ever forgets that this is war time. This means that the latest and newest ideas in business must be gathered at once. New lines and the new developments in standard lines need the close attention of the dealer. He finds these things brought to light at this great show. The dealer profits best who makes his connection with the most saleable goods, and also learns, so that he can put them in operation himself, the best selling points of the goods in the lines he carries. Once the automobile show may have been, in character, simply a spectacle. Today it is a solid business institution which even a world war could not shake from its purpose. Through it the retailer, jobber and manufacturer catch the spirit of the times and arrange the course of future business now. The fact that this national show was simply swamped with demands on its space shows how very much alive the motor industry is in the opening days of 1918.

All that is new in the accessory field will be found on the upper floors of the Grand Central Palace. Combinations of everything to make a car complete are displayed by the 260 or more exhibitors of accessories and parts, who represent the cream of the accessory manufacturers, being in a majority of cases members of the Motor and Accessory Manufacturers' Association.

Figures to show the magnitude of the automobile industry, including the capital involved, the cars in use and the labor employed, that have been compiled from various sources by Alfred Reeves, general manager of the National Automobile Chamber of Commerce, prove better than can be done in any other way the interests represented in this show.

### DEALERS, GARAGES.

| | |
|---|---|
| Total dealers, garages, repair shops in U. S. | 46,000 |
| Automobile and truck dealers in U. S. | 27,000 |
| Garages | 25,500 |
| Automobile repair shops | 13,500 |
| Tire vulcanizers | 12,000 |
| Automobile supply houses | 2,550 |
| Jobbers of automobile supplies | 282 |
| Capital invested by dealers, garages, etc., estimated at $4000 each | $184,000,000 |
| Workers employed, estimated average of five each | 230,000 |
| Wages paid, estimated at $800 per man | $184 000,000 |

### AUTOMOBILE EXPORTS.

| | |
|---|---|
| Value of automobiles, trucks, engines, tires and parts exported 12 months ended June 30, 1917 | $133,411,217 |
| Number of passenger automobiles exported last fiscal year | 64,834 |
| Value of passenger cars exported | $48,620,928 |
| Number of commercial cars exported last fiscal year | 15,977 |
| Value of commercial cars exported | $42,337,315 |
| Value of automobile engines, tires and parts exported last fiscal year | $42,452,974 |

### MOTOR VEHICLES IN USE.

| | |
|---|---|
| Motor vehicles registered in U. S | 4,842,139 |
| Motor vehicles in New York state | 418,000 |
| Motor trucks in use in U. S | 435,000 |
| Tons of goods hauled yearly by trucks (estimated) | 1,200,000,000 |
| Cost of haulage by motor trucks at 18c per ton-mile | $1,080,000,000 |
| Cost of haulage on basis of 24c per ton-mile by horse and wagon | $1,440,000,000 |
| Value of passenger service at railroad rate of two cents per mile | $1,152,600,000 |
| Number of persons in U. S. to one motor car | 24 |
| Number of persons to one motor car in 11 Middle West states | 17 |
| Number of persons to one motor car in 11 Eastern states | 26 |
| Percentage of cars sold to farmers in 1917 (estimated) | 40 |
| Number of automobiles in U. S. to each mile of public road | 1.72 |
| Number of automobiles in U. S. to each mile of surfaced road | 14.77 |
| Number of automobiles in U. S. for each square mile | 1.4 |
| Automobiles in use in all countries outside of the U. S., Jan. 1, 1917 | 719,246 |
| Automobiles in use in Europe, Jan. 1, 1917 | 437,558 |
| Automobiles in use in Canada, Jan. 1, 1917 | 118,086 |
| Automobiles in use in South America, Jan. 1, 1917 | 39,188 |
| Automobiles in use in Austral-Asia and Oceania, Jan. 1, 1917 | 55,340 |
| Horses in the United States | 24,000,000 |
| Acres of land required to sustain horses | 120,000,000 |
| Horses displaced by motor trucks in use (estimated) | 2,000,000 |
| Acres of land released by trucks for production of human foods | 10,000,000 |
| Horses and mules exported in last three years | 1,232,959 |

### MOTOR CAR MANUFACTURERS.

| | |
|---|---|
| Motor vehicle manufacturers in U. S | 550 |
| Commercial vehicle manufacturers | 372 |
| Passenger vehicle manufacturers | 238 |
| States in which factories are located | 32 |
| Capital invested | $736,000,000 |
| Workers employed | 280,000 |
| Wages and salaries paid during fiscal year ended June 30, 1917 | $275,000,000 |
| Motor vehicles produced in last fiscal year | 1,806,194 |
| Passenger cars produced | 1,693,994 |
| Commercial cars produced | 112,200 |
| Wholesale value of vehicles produced during last fiscal year | $917,470,938 |
| Paid for parts and materials by automobile manufacturers during last fiscal year | $480,000,000 |
| Production passenger cars in calendar year 1917 | 1,795,640 |
| Production commercial cars in calendar year 1917 | 181,348 |
| Average price of passenger cars produced in 1917 | $720 |

### BODY, PARTS AND ACCESSORY MAKERS.

| | |
|---|---|
| Number of concerns manufacturing some article used in auto trade | 6,789 |
| Body, parts and accessory makers in U. S | 1,080 |
| Capital invested by body, parts and accessory makers | $336,000,000 |
| Workers employed by body, parts and accessory makers, 320,000 workers, wages paid yearly at $900 per man | $288,000,000 |
| Automobile tires manufactured during fiscal year ended June 30, 1917 | 18,000,000 |
| Value of tires manufactured in last fiscal year | $450,000,000 |

# *M & A M A Suggest Levying War Tax on Owner*

**Advocates Repeal of System Which Places Damper of Sales on New Cars.**

The Motor and Accessory Manufacturers' Association at its meeting held in the Hotel Statler, Detroit, on Dec. 14, passed a resolution recommending that the three per cent. tax on new motor cars be repealed and that a graduated individual owner's tax similar to the one originally suggested by the Senate Finance Committee, be substituted.

The meeting, which was called by the Automobile Industries Committee of the War Industries Board, was attended by over 300 prominent manufacturers and their representatives. The president of the association, C. W. Stiger, presided. A. W. Copland, chairman of the committee, was the first speaker, and Hugh Chalmers spoke second. The latter, in a very enthusiastic address defended the motor car industry and said it was not to be stopped by rumor or otherwise. Many subjects came up for discussion but were of a nature that it was deemed advisable to keep secret. Car manufacturers and the N. A. C. C. were represented in the discussion by W. E. Metzger, S. A. Miles and Alvan Macauley, and the other speakers were: L. M. Wainwright, E. H. Broadwell and Joseph F. Davis, president of the Chicago Automobile Dealers' Association; Albert Champion, W. O. Rutherford and Capt. McMunn of the Navy. Capt. McMunn dwelt upon the urgent need of skilled mechanics for work in the aviation corps and general war work, and appealed to the members to release men for such duties.

There were also three other resolutions adopted in addition to the one recommending a change in the tax. One recommended the increase in the price of coal even to a point of paying a premium as an incentive to increasing production; another indorsing the work of the Automobile Industries Committee; a testimonial to President Charles W. Stiger for "his splendid and patriotic work and for his zealous and unselfish protection of the interests of the manufacturers of motors, parts and accessories. The fourth resolution was in the form of a suggestion to the Interstate Commerce Commission, that it curtail railroad short hauls, especially under 25 miles, at all points where practical, and that the commission call on the motor car and motor truck industry to submit plans for supplementing the transportation facilities of the railroads.

AUTOMOBILE SHOW
AUTOMOBILE SHOW
AUTOMOBILE SHOW

Grand Central Palace, New York, Home of the National Automobile Show; S. A. Miles, Manager; Artists in Matt and Lorgan's Studio Preparing Show Decorations.

### MANLEY MACHINES AS PRIZES.

A notable prize contest is scheduled for the national automobile shows, at New York and Chicago, by the United Engine and Manufacturing Co., Hanover, Pa. The prizes are one Manley Portable Crane, one Manley Engine Stand, one Manley Two-ton Press and one Manley Two-tank Oil Service. The four prizes will be given to the four contestants who submit the best reasons why they want the respective machines for which they compete. Papers will be kept by duplicate numbers and the winners will be decided by a board of judges. The New York show contest will close on Jan. 26, 1918.

# *Northway Motors Will Make Cars and Trucks*

**Chief Engineer of $5,000,000 Corporation in Boston Is Well Known in the Industry.**

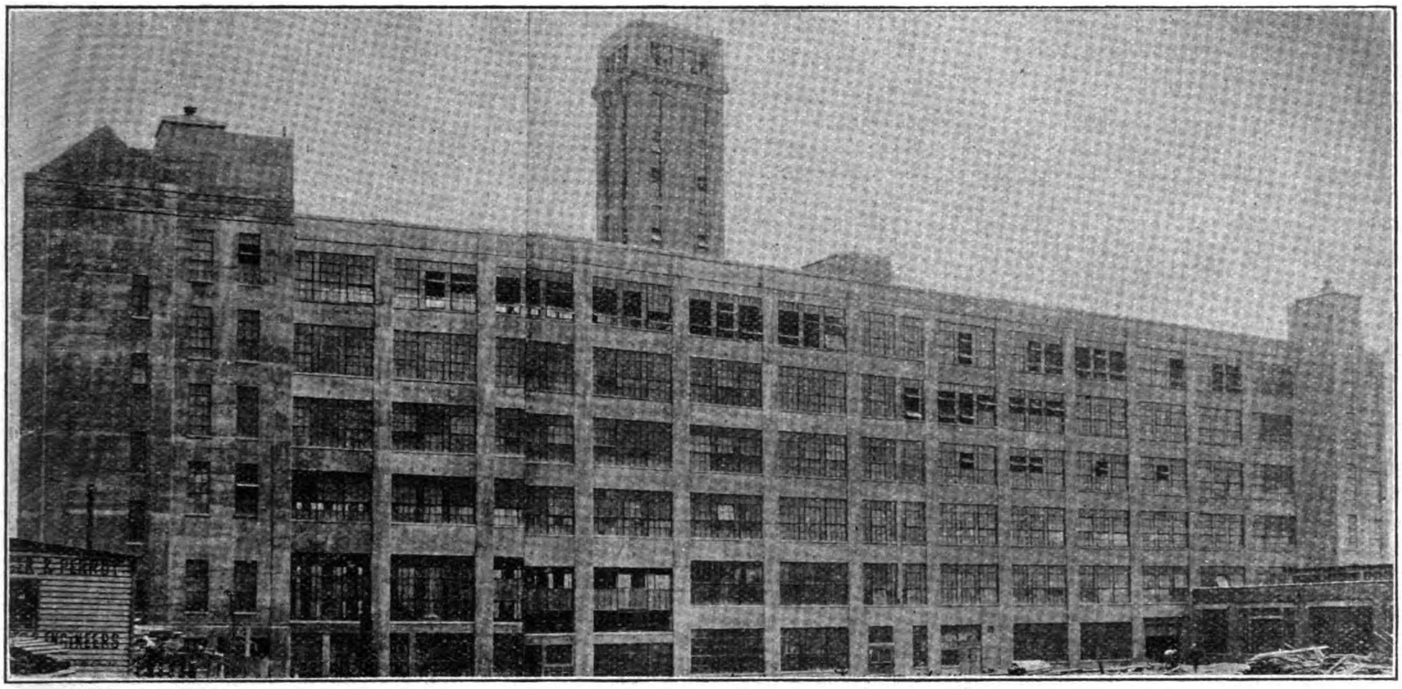
The Northway Motors Corporation has been chartered in Boston, Mass., with an authorized capital of $5,000,000, and R. E. Northway, the well known automobile man of Detroit, will be chief engineer of the company. The company plans to manufacture a line of passenger cars and trucks.

Officers of the company are: President, James F. Cavanagh; secretary and treasurer, James F. Finneran, head of the Woodward Drug Co.; chairman of the executive committee.

### MOTOR SPECIALTIES CO. WILL EXHIBIT AT THE ASTOR.

The Motor Specialties Co., Waltham. Mass., was unable to secure the required amount of space to properly exhibit its products at the Grand Central Palace, so will display at the Hotel Astor during the week of the National Automobile Show in New York.

F. C. Hershes is general manager, and Sales Manager A. Fraser will have charge of the exhibit and all the company's salesmen will be present during the week to meet the trade and assure them of the proper attention and cordiality. A number of new specialties are being introduced on the market by the company, which are being backed up by an extensive advertising campaign. The Mosco line for 1918 includes Bemus T Timer, Marine Type No. 1300 with circuit breaker; "Mosco" Steering Rod Anti-Rattler, improved Bemus timer; "Mosco" Floating Plunger Wheel Puller. "Mosco" Valve Spring Grinder, "Mosco" Demountable Rim Tool and "Mosco" Valve Spring Compressor. The "Mosco" 1918 catalog and discount sheets are now ready for distribution.



Large Model Daylight Factory Built for the Stewart Company in Long Island City, Queensborough, N. Y., Which Has Been Purchased Recently by a Syndicate and Turned to the Use of the Government in Making Army Supplies.

# HAPPENINGS AMONG THE CAR AND PARTS MAKERS

## What Several of the Leading Manufacturers in the Motor Vehicle Industry and Allied Lines Are Doing or Have Under Consideration

**J. K. Stewart & Co.'s plant**, erected for the manufacture of automobile parts, Queensborough, N. Y., passed to the uses of the government the second week in December. This model daylight factory is the latest of the big factory buildings to be erected in Queens, costing $1,200,000, and it was recently bought by a syndicate. Machinery moved into the building is said to be for the purpose of manufacturing gas masks and other articles used by the soldiers of the United States in France.

**The E. I. du Pont de Nemours & Co.**, Wilmington, Del., has acquired the paint and wood finishing business of the Bridgeport Wood Finishing Co. of Still River, Conn. This purchase is the second made by the Du Pont company within a short while since its entry into the paint business, the old established firm of Harrison Bros. & Co., Inc., of Philadelphia, having been acquired some time ago and operated since as "Harrisons, Inc." The Bridgeport Wood Finishing Co. has been manufacturing a line of paint and wood finishes for more than 40 years and its products have earned an enviable reputation both in this country and abroad. These products, as is the case with other Du Pont products, will be brought before the public in a large way.

**The Weidely Motors Manufacturing Co.** has increased its capital stock to provide for the expansion of its manufacturing facilities, including the erection of a new plant which will triple its manufacturing space. The common stock has been increased to $1,000,000 from $600,000, the issue of preferred of $1,000,000 remaining unchanged.

**Stanley Motor Carriage Co.**, Newton, Mass., has increased the price of its steam cars. The seven-passenger touring car formerly sold at $2300 is now selling for $2500, and the five-passenger roadster formerly sold for $2200 is now selling for $2400.

**The Durham Buggy Co.** of Durham, N. C., have been appointed distributors of the Stanley steam car in the territory of North Carolina. The company is a well established concern and is in a good position to handle the Stanley sales.

**The Reinhard Brothers Co.**, of Minneapolis, Minn., has been appointed sole distributors of Gray & Davis starting and lighting systems for Ford cars covering the territory of Northern Wisconsin and North and South Dakota.

**The Prest-O-Lite Co., Inc.**, Indianapolis, Ind., has appointed the following acetylene distributors: Speedway Garage, Pauora, Ia.; Manitowac Storage Battery Co., Milwaukee, Wis.; Eugene F. Bates, Skelton building, Greenville, S. C.; Harris Motor Car Co., Cape Girardeau, Mo.; Queen City Motor Shop, 50 Granite street, Manchester, N. H.; City Garage, 138 Maumee, Adrian, Mich.; Campbell & Son, 215-19 E. Seventh street, Auburn, Ind.; Inland Motor Supply Corp., 815 Central avenue, Connersville, Ind.; National Auto and Supply Co., 425 Vine street, Evansville, Ind.; A. P. Powell & Son, 128 W. Main street, Greensburg, Ind.; Jacob W. Wilcox, E. Main street, Lebanon, Ind.; Druley & Bollet, 215 S. Branson street, Marion, Ind.; The McConaha Co, 418-420 Main street, Richmond, Ind.; John S. Cox, 222 South Seventh street, Terre Haute, Ind., and L. A. Baber, Wabash, Ind.

**The Markley Commercial Body Co.**, Pontiac, Mich., has been formed with a capital of $25,000. The incorporators are the following: Verne G. Markley, Mabel J. Markley and Jesse W. Markley.

**The Miller Tool and Manufacturing Co.**, Detroit, is now located in a two-story building at 16th and Newark streets. This makes 100 per cent. more floor space. Small vehicle parts were formerly manufactured, but new machinery has made it possible to manufacture tool equipment for car, truck and tractor makers.

**The Sebring Tire and Rubber Co.**, Alliance, O., will build two new buildings and a new addition to the main building. The company expects to have the buildings completed by Feb. 1 and the capacity of the plant will be increased from 150 to 500 tires a day.

**The Federal Motor Truck Co.** will construct a two-story brick and steel factory 95 by 308 by 34 feet, to cost $45,000. This is a continuation of the general expansion that has been made in the last year to care for the increased production.

**The Republic Motor Truck Co.**, Alma, Mich., has completed its commercial laboratory. E. G. Pierce has been appointed consulting engineer in charge of the laboratory.

**The Goodyear Tire and Rubber Co.**, Akron, O., has organized drill classes for al of its men of draft age. The class is in charge of a retired army officer.

**The Winton Co.**, Cleveland, O., has sold to the French government 125 limousines. Part of the shipment is now ready and the balance will be completed as soon as possible.

**The Banting Machine Co.**, Toledo, O., is conducting a school for educating the dealer and farmer in the advantages of the farm tractor. The instructor is Service Manager Van Balkenberg of the Avery Tractor Co., Indianapolis, Ind. It is planned to conduct the school at regular intervals.

**The Peoria Tractor Co.**, Peoria, Ill., has been reorganized and the capital stock increased to $1,500,000. The plant will be enlarged to permit the construction of 2000 tractors a year. An order for 300 has been obtained from the British government.

**The Fahrig Metal Co.** has opened its new plant at Jersey City, N. J. The company will continue manufacturing the Fahrig anti-friction metal in the New York plant. The new plant will enable the company to double its production.

**The Keystone Tire and Rubber Co.**, New York, N. Y., has declared an extra dividend of one-third per cent. The regular three per cent. dividend on common stock has also been declared. All are payable Jan. 2 to stockholders of record Dec. 22.

**The Boone Tire and Rubber Co.**, Chippewa Falls, Wis., is establishing a southwestern factory branch at Fort Worth, Tex., to be opened in January. The company maintains a large plant in Sycamore, Ill. I. V. MacLean, president and general manager is supervising the establishment of the branch at Fort Worth.

**The Firestone Tire and Rubber Co.**, Akron, O., is adding to its extensive line a special blow out patch for distribution by jobbers exclusively.

**The Saxon Car Corporation**, Detroit, Mich., is delivering to dealers a 500-pound light delivery car built on its six-cylinder chassis. It may be supplied with either panel body or open body with curtains. The chassis has been made heavier so as to take care of the additional load. The price is $850.

**The U. S. Auto Gear Shift Co.**, Eau Claire, Wis., has been incorporated with a capital stock of $1,000,000. The company will manufacture a new type of hydraulic gear shifting device for passenger cars and trucks. L. A. Laursen is the inventor of the gear shift.

**Dodge Bros.**, Detroit, Mich., has increased its capital stock from $6,000,000 to $10,000,000. To take care of the government contracts additions will be built to the plant.

**Studebaker Corporation**, South Bend, Ind., will soon have the additions to the plant completed and will cost about $2,000,000. All of the structures are being built of reinforced concrete. A four-story dry kiln and machine forge shops are among the new additions.

**The Moore Motor Vehicle Co.**, Tilton, Ill., has recently opened a plant. With the machinery installed the work of manufacturing the Moore 30-passenger cars will be quickly handled.

**The Wagner Axle Co.**, Anderson, Ind., has been awarded a contract by the government for the manufacture of axles for the new Liberty Motor trucks. The company recently acquired the plant of the De Tamble Motors Co. Plans are now being made to increase the floor space of the plant from 80,000 to 280,000 square feet.

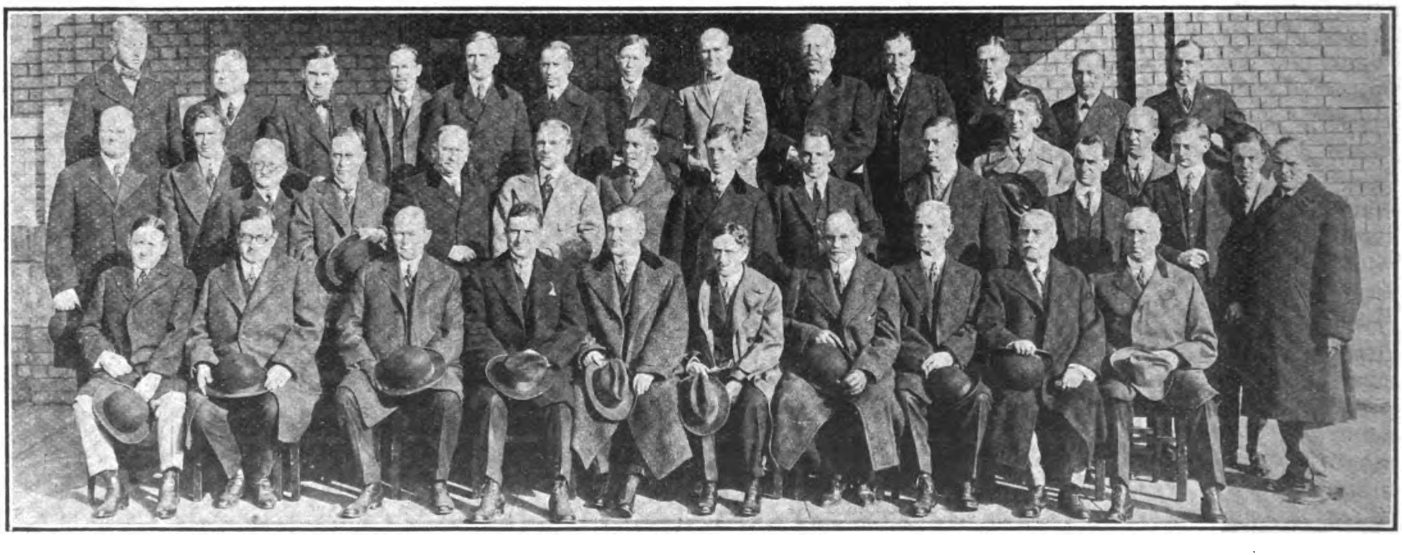
**The Racine Motor Truck Co.** has decided on Appleton, Wis., as the permanent location for its factory and headquarters. The company was incorporated about six months ago with a capitalization of $500,000 to take over and develop the motor truck business of Piggins Brothers, Racine, Wis.

**The Bour Davis Motor Car Co.**, manufacturers of the Bour Davis cars; Shadburne Brothers, Chicago, Ill., manufacturers of the Shadwyck Six; the Dixie Motor Car Co., Louisville, Ky., manufacturers of the, Dixie Flyer, and the Collin Body Co., St. Louis, Mo., have been incorporated under the laws of the State of Illinois into a new company to be known as the Combined Motors Corporation.

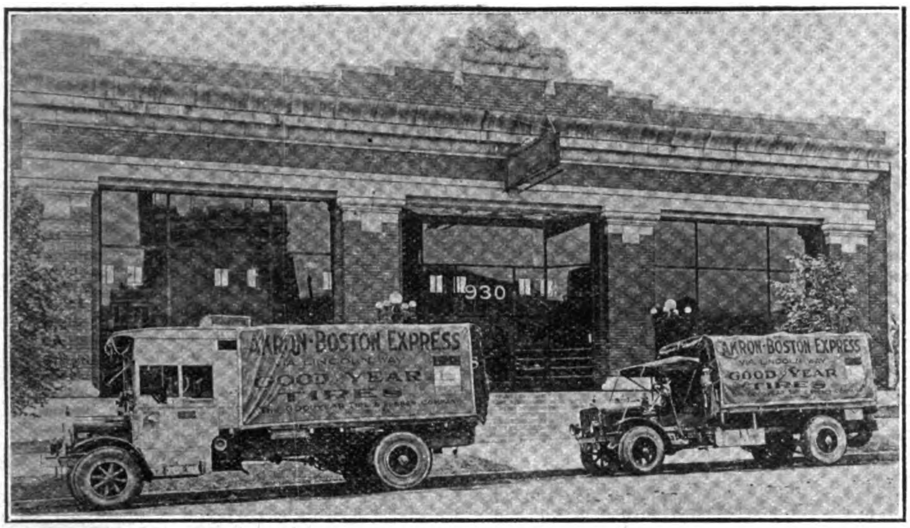
**The United States Motor Truck Co.**, Cincinati, O., is rapidly increasing its production and is at present carrying a production of 150 trucks. The trucks range from 2½ tons to the five-tons capacity. The distributing force has been increased to take care of the increasing production.

**The B. F. Goodrich Rubber Co., Akron,** O., have announced changes in the managerships of eight of its branches. T. B. Graham has been appointed manager at Seattle, Wash., to succeed C. J. Pomeroy, who has entered the service, and E. D. Young succeeds W. W. Vandever as manager at South Bend, Ind. Mr. Vandever has been transferred to the Goodrich sales school. Other appointments of managers are as follows: J. W. Moore, Fort Worth, Tex.; W. J. Balaum, Waco, Tex.; F. T. Reuter, Oklahoma City; S. S. Clark, Salina, Kan.; W. F. Burbank, San Diego, Cal.

**The Firestone Tire and Rubber Co.'s** annual meeting Dec. 15 was a distinctive affair in that several thousand employee stockholders, filling two halls, participated in the election of directors and made the record of probably the most largely attended meeting of stockholders ever held in the United States. Directors were elected and President Firestone's address revealed sales for the year of $61,587,219.29, a gain of 71 per cent. over the previous year. In the latter part of November President Firestone was host to the Rubber Club of America at a meeting held in Akron.



**Rubber Club of America, Guests of H. S. Firestone at Akron, O., Recently. From Left to Right: First Row Seated, R. J. Firestone, H. S. Vorhis, W. E. Brwyn, C. T. Wilson, W. O. Rutherford, H. S. Firestone, G. B. Hodgman, W. J. Kelly, V. H. Cartwell, P. W. Litchfield. Second Row, Standing, E. B. Davis, Ernest Hopkinson, E. E. Huber, W. G. Ryckman, L. E. Sisler, H. T. Dum, F. R. Henderson, G. A. Luddington, P. E. Young, R. L. Rice, L. M. Stadelman, R. E. Glass, A. H. Brown, M. E. Ake, H. W. Smith, J. G. Robertson. Third Row: A. G. Partridge, Jesse E. LaDow, H. J. Adams, T. C. Marshall, J. W. Thomas, S. G. Carkhuff, C. B. Raymond, R. E. Lee, Russel Parker, H. K. Raymond, J. C. Weston, Seneca Lewis, A. B. Jones.**



Two Trucks of the Overland Freight Fleet Operated by the Goodyear Tire and Rubber Co., Between Their Plants in Akron, O., and Goodyear, Conn., and Boston, Mass., a Haul of 1500 Miles on Which a Regular Schedule Is Maintained.

**The Grant Motor Car Corporation,** Cleveland, O., has announced a new price schedule for its 1918 models. The new list is as follows: Touring car and roadster, $1055; detachable sedan touring, $1350; all-weather sedan touring, $1595; all-weather sedan, $1575.

**The Marathon Tire and Rubber Co.,** Cuyahoga Falls, O., during September, October and November increased its sales 60 per cent. as compared with the same period of the previous year. Orders on the book are 80 per cent. greater than at the same time in any previous year.

**The Edison Storage Battery Co.,** West Orange, N. J., will increase its capital stock from $3,500,000 to $5,000,000. The certificate of increase filed with the secretary of state of New Jersey states that 20,000 shares of stock will be preferred of a par value of $100 each and 30,000 shares are common stock of the same par value.

**The Jordan Motor Car Co.** has announced a sport marine new type Jordan car. The new car is distinguished by unusual and exclusive features, including a new power unit, designed for Jordan and built by the Continental Motors Corporation, and an all-aluminum custom style body. The body is an entirely new design of the straight line type, with square doors paneled in Honduras mahogany and upholstered in special bright hand buffed genuine leather with velvet tonneau rug.

**Th Saxon Motor Car Corporation,** Detroit, Mich., has announced an increase of $50 in the price of the Saxon four-cylinder roadster from $395 to $445, the new price to become effective Jan. 1.

**The Jackson Sales Co.,** Pittsburgh, Pa., has been appointed agent for Dart trucks in the western part of the state. Headquarters have been opened at 5919 Penn street. The territory includes Eastern Ohio and Northern West Virginia.

**The Prest-O-Lite Co., Inc.,** Indianapolis, Ind., has announced the appointment of the following battery service stations: Tenth Street Garage, Tenth street and Second avenue, Upland, Cal.; Arizona Electric Appliance Co., First street, Jerome, Ariz.; L. A. Duncan, 2934 W. Pico street, Los Angeles, Cal.; Norwood Auto Station, 666 Washington street, Norwood, Mass.; Elizabeth Storage Battery Co., 239 Union street, Elizabeth, N. J.; Battery Service Co., Connelsville, Pa.; M. M. Steward Co., Aberdeen, Wash.; Leone & Johnson, 1031 Fifth avenue, Seattle, Wash.; Maxfield Motor Car Co., Inc., Torrington, Conn.; Maxfield Motor Car Co., Winsted, Conn.; James Jackson, 338 Newbury street, Boston, Mass.; Ira and John Green, 21 Water street, Pontiac, Mich.; Miller Auto Co., Vicksburg, Miss.; John E. Graybill Co., 104 E. Market street, York, Pa.; Valley Auto Electric Co., El Centro. Cal.; Phillan & Sanborn (Hemet Garage), Hemet, Cal.; St. Vrain Auto Co., Longmont, Col.; Zimmerman Battery Co., 1018 14th street, Washington, D. C.; Brodes Garage, Court and Eden streets, Plaquemine, La.; Frank W. Darby & Son, Athol, Mass.; Electric Shop, Pocahontas, Ia.; Central Garage, 40 Butler street, Meriden, Conn.; Fairbury Battery Service Co., 524 D street, Fairbury, Neb.; John B. Cobb, 106 Centre street, Medina, N. Y.; Calexico Battery and Electric Co., 105 Third street, Calexico, Cal.; C. E. Hunt, 25 Canal street, Greenville, Pa.; Cooper Auto and Machine Works, Blytheville, Ark.; C. M. Canon, Opelika, Ala.; the Battery Mart, Frederick, Md.; Falmouth Electric Co., Main street, Falmouth, Mass.; R. S. Harper, Lancaster, S. C.; John H. Johnson & Sons, Main and Boliver streets, Jackson, Tenn.; Brewer-Mosel Auto Co., 107 E. Doty street, Madison, Wis.

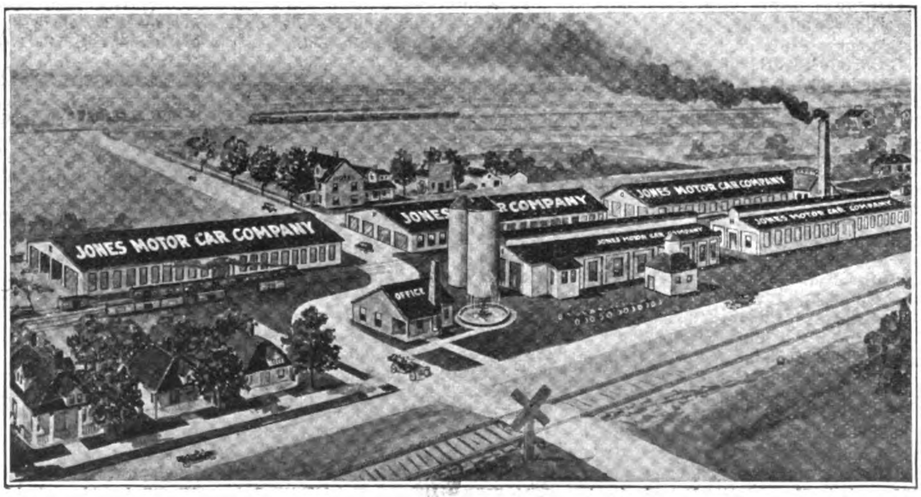
**The Fisher Body Corporation** and subsidiaries reports for the quarter ending Oct. 13, 1917, a total net income of $1,033,814, as compared with $776,205 for the preceding quarter. Interest charges for the period were $40,253, as against $28,855 during the period ending in July, and the surplus was $993,561, against $747,350 in the preceding quarter.

**The Jones Motor Car Co.,** Wichita, Kan., will increase its capital stock from $500,00 to $1,500,000 for the purpose of expanding production. The increase was authorized at a meeting of stockholders held on Dec. 6. President J. J. Jones presided at the meeting and addressed the members on the company's progress and the program for the future.

**The Mutual Motors Co.** of Jackson, Mich., manufacturers of the Marion-Handley car, is in the hands of the Detroit Trust Co., appointed receiver in bankruptcy. The company was formed from a consolidation of the Marion company of Indianapolis, Ind., and the Imperial company of Jackson, Mich.

**The Ohio Wholesale Auto Co.** has been incorporated at Toledo, O., to distribute Dort cars throughout Ohio and agencies have been established at Cleveland, Cincinnati, Dayton and Columbus, and arrangements are being made for a retail agency at Toledo also. Other agencies will also be established throughout the state. Officers of the company are: President, George W. Barnes, Muskogee, Okla.; vice president and general manager, Lee Beeler; secretary, O. W. Smith. The company succeeds the F. R. Mitchell Co.

**The Reo Motor Car Co.** is said to have over 2000 unfilled orders on its books. The plant will operate night and day for the next year on government contracts and 5000 men will be added to the working force.



Home of Jones Motor Car Co., Wichita, Kan., the Biggest Metallic Trade Factory in the Agricultural Sunflower State.

# *Service List for Orphan Car Repair Parts*

## Numbers Appended to Names of Cars Listed Correspond With Those Against the Dealers and Makers Enumerated in the Subjoined Columns

Acme—6, 150.
Adams Truck—114.
Aerocar—8, 9, 10, 11, 150, 171.
Alco—1, 2, 28, 43, 54, 80, 99, 150, 152.
Alden Sampson—150, 171, 172.
Allen Kingston—8, 9, 10, 80, 124, 130, 150.
Allis-Chalmers—9, 10, 150.
Alma—58.
American Mors—161.
American Underslung—3, 8, 9, 10, 11, 32, 80, 114.
American Truck—11, 143.
Alpena—9, 10, 80, 150.
Alter—3, 150.
American Voiturette—171, 172.
Ames—8, 9, 10, 80, 166.
Amplex—78, 80, 124, 143, 150.
Anchor—4, 84.
Anhut—9, 150.
Ardsley—7.
Argo—150.
Atlantic—9, 10, 150.
Atlas—8, 9, 10, 80, 124, 150.
Autocar (passenger)—15, 150.
Autocar Defender—124.

Babcock—9, 10, 20, 80, 150.
Badger—8, 9, 10, 150, 162.
Barnes—150.
Benham—80, 150.
Benz—80.
Bergdol—8, 9, 10, 14, 26, 80, 11, 113, 124, 130, 143, 150, 184.
Berkshire—8, 9, 10, 23, 25, 150.
Berliet—2.
Bessemer—54, 150.
Bimel-Elco—3, 27.
Black Crow—53.
Blomstrom—150.
Borland—150.
Briggs-Detroit—26, 29, 11, 113, 130, 150.
Brintell—9, 10, 150.
Broc—150.
Brodesser—150.
Brown Commercial—11, 82.
Brownie Kar—93.
Brush—13, 58, 80, 130, 134, 150, 169, 172.
Buffalo Electric—150.
Bush (old)—185.

California—150.
Cameron (air cooled)—33.
Carhartt—8, 9, 10, 11, 80, 150.
Carnation—8, 9, 10, 11, 34, 104, 150.
Carter Car—13, 124, 150, 169.
Carthage—150.
Cavoc—150.
Century—150.
Chadwick—38.
Chief—41.
Cino—86, 150.
Clark—3, 9, 10, 42, 43, 125, 150.
Clark Carter—54, 55, 68, 150.
Cleveland—76, 143.
Coates-Goshen—45, 80, 132.
Colburn—46, 64, 150.
Colby—9, 10, 87, 150, 166.
Coleman—58.
Colley—150.
Columbia (old)—13, 47, 143, 150, 171, 172.
Columbus (gas)—137.
Columbus (electric)—137.
Connersville—9, 10, 150.
Continental—68, 143, 150.
Corbin—51, 143, 150
Corbitt—150.
Correja—8, 9, 10, 58, 80, 143.
Courier—8, 9, 10, 58, 80, 124, 150, 169, 171, 172.
Courier Clermont (Brush Co.) —150, 172.
Craig (Toledo)—9, 10, 49, 150.
Crescent (Ohio)—8, 9, 10, 52, 140, 150, 166.
Cricket—150.
Crow—8, 9, 10, 53, 150.
Croxton Keeton—8, 9, 10, 104, 143, 150.
Cutting—8, 9, 10, 13, 68, 80, 88, 130, 150.

Dart—11, 150.
Dayton—150.
Deal—11.
Dearborn-Detroit—97, 150.
Deere-Clark—111.
Decauville—80.
De Kalb—150.
De Luxe—150.
Demot—150.
Deschaum—150.
De Sota—191.
De Tamble—3, 8, 9, 10, 26, 120, 150, 169.
Detroit-Chatam—150.
Diamond—8, 9, 10, 158.
Dolson—8, 9, 10.
Dragon—80, 146, 150.
Duer—40.
Durocar—9, 10, 150.

E. M. F.—10, 13, 14, 38, 124, 143, 150, 169, 178.
Eclipse—150, 182.
Economy—18.
Edwards—9, 10, 63, 150, 190.
Elco—3.
Elk—9, 10, 150.
Elmore—8, 9, 10, 11, 13, 14, 30, 80, 150, 172.
Enger—3, 8, 9, 10, 67, 80.
Everitt—8, 9, 10, 13, 80, 150, 172.
Everett—8, 9, 14, 80, 143, 172.
Ewing—70, 80, 143, 150.

F. A. L.—8, 9, 10, 11, 80, 104, 150.
Fawick—189.
Firestone Columbia—8, 9, 10, 18, 137, 150.
Findlay—70.
Flanders (electric)—11, 184.
Flanders (six)—8, 9, 10, 13, 14, 26, 111, 113, 124, 130, 143, 150, 169, 172, 178.
Fuller—100.

G. J. G.—9, 10, 80, 143, 150.
Gaeth—74.
Garford (passenger)—66, 76, 143, 150.
Garford Elyria truck—76.
Garford Lima truck—76.
Garford-Studebaker—76.
Gleason—22.
Gabrowsky—58, 61, 80, 143, 150.
Gramm Logan truck—76, 150.
Gramm truck—76, 150.
Great Smith—22, 165.
Great Western—8, 9, 10, 11, 13, 82, 124, 150.
Green Dragon—18.
Grout—150, 155.

Halliday—9, 124.
Hamilton—185.
Hart Kraft—145.
Havers—8, 9, 10, 78, 80, 150.
Henderson—8, 9, 10, 11, 31, 91, 124, 150, 171.
Henry—8, 9, 10, 14, 80, 124, 136, 150, 166.
Herreshoff—3, 9, 10, 14, 80, 92, 111, 120, 124, 150.
Hewitt—99, 143.
Holsman—125.
Houpt Rockwell—138.
Illinois—166.
Imperial—8, 9, 10, 13, 68, 98, 150, 171.
Indiana—9, 10, 150.

Jenkins—9, 10, 150.
Jewel—56.
Johnson (cars and trucks)—102, 166.

Keeton—9, 10, 11, 34, 105, 150, 171.
Kelly-Springfield—150.
Kelsey—16, 106, 150.
Kermath—150.
Klin (old models)—9, 10, 14, 80, 143, 150.
Knox—1, 37, 108, 124, 143.
Komet—107, 150.
Kral—9, 10, 150.
Krit—8, 9, 10, 11, 13, 14, 109, 134, 135, 150, 169, 171.

Lansdan—110.
L. P. C.—117.
Lewis Six—3, 9, 117, 120, 150.
Lauth Jergens—38.
Lenox (old models)—8, 9, 10, 150.
Lion—9, 10, 11, 26, 104, 111, 113, 130, 150, 184.
Little Four—8, 9, 10, 39, 150.
Little Six—8, 9, 10, 39, 150.
Lozier (old)—143, 146, 150.
Luverne—8, 9, 10.

Marathon—8, 9, 10, 80, 118, 143, 150.
Marion—3, 8, 9, 10, 11, 13, 17, 80, 104, 114, 120, 143, 150, 179.
Marquette—9, 10, 28, 143, 150.
Marvel—150.
Mason—68, 121, 150, 171.
Mather—150.
Matheson—122, 124, 143, 150.
Marron—150.
Maunee—30.
Maxwell (old)—8, 9, 10, 13, 123, 143, 150, 172.
Maxwell (Briscoe)—143, 172.
Maytag-Mason—9, 10, 121, 150.
McIntyre—150.
Merchant—150.
Mercury Truck—125.
Meteor—8, 9, 10, 127, 150.
Michigan—8, 9, 10, 11, 57, 80, 104, 129, 146, 150, 171.
Middleby—9, 10, 79, 112, 150.
Midland—8, 9, 10, 11, 13, 26, 104, 124, 130, 150, 184.
Mier—131.
Miller—8, 9, 10, 150.
Milwaukee—68, 88, 166.
Monarch—75, 80, 150.
Mora—80, 143, 146, 150.
Moyer—8, 9, 10, 150.

Nance—80.
Northwestern—150.
Northern—11, 150.
Nyberg—3, 8, 9, 10, 111, 114, 150.

Oliver—142, 150.
Omaha—8, 9, 10, 150, 166.
Only—115.
Orient—128.
Orson—62, 143.
Oswald—18.
Overholt—166.
Otto-Mobile—94.
Owen—150.

Packers—143, 150.
Paige (old)—13, 150.
Palmer-Singer—8, 9, 10, 62, 143, 150, 164, 166.
Panhard—19, 143.
Parry—8, 9, 10, 14, 144, 150, 169.
Paulding—5.
Peabody—9, 10, 150.
Pennsylvania—31, 36, 80, 143, 150, 173.
Penn 30—9, 10, 31, 80, 143, 150.
Peru—150.
Petrel—24, 35, 71.
Pierce-Racine—9, 10, 35, 147, 150.
Pioneer—150.
Pope-Hartford—10, 28, 37, 89, 124, 143, 150, 159, 169, 186.
Pope-Toledo—18, 124, 143, 150, 169.
Pope-Tribune—89, 150, 186.
Poss—14, 150.
Pratt Elkhart—65, 189.
Pullman—26, 80, 111, 115, 130, 150, 189.
Pungs Finch—148, 150.

Queen—11, 150.

R. C. H.—8, 9, 10, 14, 32, 80, 101, 124, 143, 146, 150, 154.
Randolph truck—11, 59, 150, 159.
Rainier—76, 143, 150.
Rapid—14, 58, 150.
Rayfield—95.
Reed—3, 120, 150.
Reading—79, 150.
Reliable Dayton—150.
Reliance—150.
Republic—10, 156.
Ricketts—158.
Rider-Lewis—3, 11, 111, 113, 114, 120, 150.
Royal Tourist—143, 150, 160.
Russel—8, 9, 10.

S. G. V.—62, 72, 143, 150.
Sampson—8, 9, 10, 58, 143, 150, 171, 172.
Sandusky truck—57.
Savoy—58.
Saybrook—58.
Schacht—8, 9, 10, 77, 150.
Scripps-Booth (cyclecar)—150.
Selden (passenger)—8, 9, 10, 80, 124, 143, 150.
Sibley—163.
Singer—80.
Sommer—168.
Southern—150, 170.
Spaulding—9, 10, 13, 150.
Speedwell—8, 9, 10, 80, 83, 103, 124, 150.
Sphinx—8, 9, 10, 185.
Springfield—85.
Standard Six—9, 58, 124, 150, 161.
Star—131, 150.
Staver—8, 9, 10, 13, 14, 124, 150, 166.
Sterling—12, 107, 150.
Stevens-Duryea—13, 124, 143, 150, 174, 175, 176, 177, 187.
Stoddard-Dayton—8, 9, 10, 13, 14, 18, 58, 80, 124, 143, 150, 171, 172.
Stratford—58.
Suburban—8, 9, 10, 150.
Sultan—80, 143, 150.

Tincher—40.
Thomas—9, 10, 11, 14, 30, 80, 101, 124, 143, 150, 159, 169, 180.
Thomas-Detroit—8, 9, 10, 150.
Touraine—80.
Tourist—82.

Traveller—183.
Trumbull—26, 111, 113, 130, 150, 184.
Twombley—63, 150, 181.

Van Dyke—150.
Victor Thomas Detroit—5.
143, 150.
Virginian—8, 9, 10.
Wagenhal—150, 157.
Wahl—9, 10, 21, 88, 150.
Walters—8, 9, 10.
Waltham Orient—128.
Warren—8, 9, 10, 13, 14, 80,
124, 150.
Washington—9, 10, 150.
Waverly (electric)—114.
Wayne—124, 150.
Welch Detroit—150.
Welch-Marquette—141.
Welch Pontiac—150.
Whiting—8, 9, 10, 39, 150.
Woodworth—150.

Yale—30.

Zimmerman—8, 9, 10, 191.
Zip—22.

## DIRECTIONS: To Find Where to Obtain the Part Desired, Look for the Name of the Car in the Car List and Refer to This List of Firms by Number.

1 Alco Service Co., 158-162 N. 22nd St., Philadelphia, Pa.
2 American Locomotive Co., Providence, R. I.
3 American Motor Parts Co., 430 N. Capital Ave., Indianapolis, Ind.
4 Anchor Buggy Co., Cincinnati, O.
5 Anchor Motor Car Co., St. Louis, Mo.
6 Arnold, Adam E., 212 S. 11th St., Reading, Pa.
7 Ardsley Motor Car Co., Yonkers, N. Y.
8 Auto Gear and Parts Co., 291-93 Marietta St., Atlanta, Ga.
9 Auto Gear and Parts Co., 1461 S. Michigan Ave., Chicago, Ill.
10 Auto Gear Co., 844 8th Ave., New York City.
11 Auto Parts Co., 737-739 W. Jackson Boulevard, Chicago, Ill.
12 Auto Parts Co., Elkhart, Ind.
13 Auto Parts Co., Omaha, Neb.
14 Auto Parts Co., St. Louis, Mo.
15 Autocar Co., Ardmore, Pa.
16 Auto Parts and Repair Co., Springfield, Mass.
17 Automobile Mechanics Corp., 221 W. 53d St., New York.
18 Auto Salvage Co., 1701-05 Main St., Kansas City, Mo.
19 Babel, L., 371 East 29th St., Chicago, Ill.
20 Babcock Mfrs. Supply Co., Watertown, N. Y.
21 Barley Motor Car Co., Streator, Ill.
22 Bauer Machine Works, Kansas City, Mo.
23 Berkshire Motor Co., Pittsfield, Mass.
24 Bever Mfg. Co., First and Oklahoma Aves., Milwaukee, Wis.
25 Belcher Engineering Co., 43 Ames St., Cambridge, Mass.
26 Bergdoll Co., Louis J., Philadelphia, Pa.
27 Bimel Automobile Co., Indianapolis, Ind.
28 Boulevard Motor Co., Waverly St. & Putnam Ave., Cambridge, Mass.
29 Briggs-Detroiter Co., Hancock and Berks Sts., Philadelphia, Pa.
30 Brown-Lipe Gear Co., Syracuse, N. Y.
31 Buda Co., Harvey, Ill.
32 Burt Motor Car Co., W. J., Pico and Hope Sts., Los Angeles, Cal.
33 Cameron Mfg. Co., New Haven, Conn.
34 Car-Nation Motor Car Co., Detroit, Mich.
35 Case, T. M. Co., J. I., Racine, Wis.
36 Central Auto Supply Co., Philadelphia Pa.
37 Chadwick, De Lamater Corp., 159 W. 24th St., New York, N. Y.
38 Chadwick Engineering Works, Pottstown, Pa.
39 Chevrolet Motor Co., Flint, Mich.
40 Chicago Coach and Carriage Co., Chicago, Ill.
41 Chief Motor Co., Detroit, Mich.
42 Clark Auto Co., Atlanta, Ga.
43 Clark Motor Car Co., Shelbyville, Ind.
44 Clyde Cars Co., Clyde, O.
45 Coates-Goshen Auto Co., Goshen, N. Y.
46 Colburn Automobile Co., Denver, Col.
47 Columbia Auto Repair Co., Hartford, Conn.
48 Columbus Buggy Parts Co., 400 Dublin Ave., Columbus, O.
49 Colter, A. W., Toledo, O.
50 Connecticut Auto Parts Co., 1070 Main St., Hartford, Conn.
51 Corbin Motor Vehicle Corp., New Britain, Conn.
52 Crescent-Ohio Service and Repair Co., St. Bernard, O.
53 Crow Elkhart Motor Co., Elkhart, Ind.
54 Cutting Co., Robert M., 2635-2645 S. Wabash Ave., Chicago, Ill.
55 Cutting Motor Car Co., Waterloo, Ia.
56 Croxton Motor Co., Washington, Pa.
57 Dauch Mfg. Co., Sandusky, O.
58 Dayton Auto Parts Co., 351 W. 52nd St., New York, N. Y.
59 DeKalb Wagon Co., DeKalb, Ill.
60 De Tamble Motors Co., 430-432 N. Capitol Ave., Anderson, Ind.
61 Detroit-Wyandotte Motor Truck Co., Wyandotte, Mich.
62 Drenco Machine and Garage Co., 527 Fifth Ave., New York, N. Y.
63 Driggs-Seabury Ordnance Co., Sharon, Pa.
64 E. & D. Garage, 12 E. Eighth Ave., Denver, Col.
65 Elkhart Carriage and Motor Car Co., Elkhart, Ind.
66 Elyria Belting and Machinery Co., Elyria, O.
67 Enger Motor Car Co., Indianapolis, Ind.
68 Erbes, L. C., 2654 W. University Ave., St. Paul, Minn.
69 Erickson & Stalnaker, Denver, Col.
70 Ewing, L. E., Cleveland, O.
71 Filer & Stowell, Milwaukee, Wis.
72 Florence Motor Rep. Co., 250 W. 54th St., New York, N. Y.
73 Frank, Paul A., 2349 Michigan Ave., Chicago, Ill.
74 Gaeth Motor Car Co., 2103 Lorain Ave., Cleveland, O.
75 Gale Auto Accessories Co., 423 Grand River Ave., Detroit, Mich.
76 Garford Motor Truck Co., Lima, O.
77 General Auto Repair Co., 908 Race St., Cincinnati, O.
78 Gillette Motors Co., Mishawaka, Ind.
79 Goldberg, H., 1420 S. Eighth St., Philadelphia, Pa.
80 Gorey & Co., J. C., 354 W. 50th St., New York, N. Y.
81 Gramm Motor Truck Co., Lima, O.
82 Great Western Automobile Co., Kalamazoo, Mich.
83 Green Engineering Co., Dayton, O.
84 Gustin Auto Co., 18 E. Mitchell Ave., Cincinnati, O.
85 Haas Electric and Mfg. Co., R., 305-307 E. Monroe St., Springfield, Ill.
86 Haberer & Co., Cincinnati, O.
87 Harper, E. V., Mason City, Ia.
88 Harris Bros. Co., Chicago, Ill.
89 Hartford Motor Car Co., Hartford, Conn.
90 Hassler Motor Car Co., Indianapolis, Ind.
91 Henderson Motor Car Co., Detroit, Mich.
92 Herreshoff Motor Co., Indianapolis, Ind.
93 Hinsdale Electrical Supply Co., Hinsdale, Ill.
94 Holly Motor Co., Mt. Holly, N. J.
95 Holmes Garage, Danville, Ill.
96 Huebotter, H. A., Davenport, Ia.
97 Huron Motor Car Co., Dearborn, Mich.
98 Imperial Automobile Co., Detroit, Mich.
99 International Motor Co., West End Ave. and 64th St., New York.
100 Jackson Automobile Co., Jackson, Mich.
101 Jahns, W. H., 908-12 W. Pico St., Los Angeles, Cal.
102 Johnson Service Co., Milwaukee, Wis.
103 Kany, A. S., 251 Boyer St., Dayton, O.
104 K. C. Auto Parts Co., 1827 McGee St., Kansas City, Mo.
105 Keeton Motor Car Co., Detroit, Mich.
106 Kelsey Motor Co., Hartford, Conn.
107 Keith Bros., Elkhart, Ind.
108 Knox Motors Associates, Springfield, Mass.
109 Krit Motor Car Co., Detroit, Mich.
110 Lansden Co., Inc., Brooklyn, N. Y.
111 Levene Motor Co., 2200-18 Diamond St., Philadelphia, Pa.
112 Levengood, A. J., 153 N. Fourth St., Reading, Pa.
113 Lion Motor Parts Co., Philadelphia, Pa.
114 Longaker Co., V. A., 448-450 N. Capitol Ave., Indianapolis, Ind.
115 Loper, G. E., Port Jefferson, N. Y.
116 Lozier Motor Co., Detroit, Mich.
117 L. P. C. Motor Co., Indianapolis, Ind.
118 Marathon Service Co., Nashville, Tenn.
120 Marion Motor Service Co., Indianapolis, Ind.
121 Mason Motor Car Co., Detroit, Mich.
122 Mathewson Co., Frank E., Wilkes-barre, Pa.
123 Maxwell Motor Sales Corp., 675 Golden Gate Ave., San Francisco, Cal.
124 Maxwell Bros., 3921 Olive St., St. Louis, Mo.
125 Mercury Mfg. Co., Chicago, Ill.
126 Meteor Motor Car Co., Piqua, O.
127 Meteor Motor Car Co., Shelbyville, Ind.
128 Metz Co., Waltham, Mass.
129 Michigan Motor Car Parts Co., Detroit, Mich.
130 Midland Motor Co., 2200-2218 Diamond St., Philadelphia, Pa.
131 Mier Carriage and Buggy Co., Ligonier, Ind.
132 Miller Car Co., Goshen, N. Y.
133 Moffitt's Sons, Binghamton, N. Y.
134 Moore & Co., John, 2204 Broadway, New York, N. Y.
135 Motor Corp., rear 1309 Race St., Philadelphia, Pa.
136 Muskegon Automobile Co., Muskegon, Mich.
137 New Columbus Buggy Co., Columbus, O.
138 New Departure Mfg., Bristol, Conn.
139 New Jersey Machinery Co., Newark, N. J.
140 Northway Auto Parts & Sales Co., 223 Kearney St., Cincinnati, O.
141 Oldsmobile Co., Chicago, Ill.
142 Olliver Motor Truck, Detroit, Mich.
143 Pacific Motor Car Exchange Co., 221 W. 53d St., New York City.
144 Pathfinder Co., Indianapolis, Ind.
145 Petrie & Morganthall, Greencastle, Pa.
146 Philadelphia Machine Works, 61-71 Laurel St., Philadelphia, Pa.
147 Pierce Motor Co., Racine, Wis.
148 Pungs-Finch Auto and Gas Engine Co., Detroit, Mich.
149 Pullman Motor Car Co., York, Pa.
150 Puritan Machine Co., Detroit, Mich.
151 Quincy Engine Co., Chambersburg, Pa.
152 Rand & Chandler, 526 S. Flower St., Los Angeles, Cal.
153 Randolph Motor Truck Co., Flint, Mich.
154 R-C-H Corp., Detroit, Mich.
155 Red Arrow Auto Co., Orange, Mass.
156 Republic Motor Car Co., Youngstown, O.
157 Riverside Machinery Depot, Detroit, Mich.
158 Ricketts Auto Works, Detroit, Mich.

159 Rosenfield, J., 521 Sixth St., Boston, Mass.
160 Royal Tourist Co., 72nd St. and St. Claire Ave., Cleveland, O.
161 St. Louis Car Co., St. Louis, Mo.
162 Schultz & Harder, Columbus, Wis.
163 Sibley Motor Car Co., Detroit, Mich.
164 Singer Motor Car Co., West End Ave. and 64th St., New York, N. Y.
165 Smith Automobile Co., Topeka, Kan.
166 Smith Co., A. O., P. O. Box 87, Milwaukee, Wis.
167 Smith, G. B., 328 Halsey St., Newark, N. J.
168 Sommer Motor Co., Detroit, Mich.
169 Southern Welding Co., Waco, Tex.
170 Southern Auto and Equipment Co., Atlanta, Ga.
171 Standard Motor Parts Co., Detroit, Mich.
172 Standard Motor Parts Co., New Castle, Ind.
173 Stehle, R. W., 1519 W. Dauphin St., Philadelphia, Pa.
174 Stevens-Duryea Co., Chicago, Ill.
175 Stevens-Duryea Co., Chicopee Falls, Mass.
176 Stevens-Duryea Co., 72 12th St., San Francisco, Cal.
177 Stevens-Duryea Service, Inc., 22 W. 61st St., New York, N. Y.
178 Studebaker Corp., Detroit, Mich.
179 Stutz Motor Car Co., 2450 Michigan Ave., Chicago, Ill.
180 Thomas Motor Car Co., E. R., Buffalo, N. Y.
181 Times Square Auto Supply Co., 56th St. and Broadway, New York.
182 Topefers Sons, Milwaukee, Wis.
183 Travellers Automobile Co., Evansville, Ind.
184 Trumbull Motor Car Co., 2200-2218 Diamond St., Philadelphia, Pa.
185 Victor Motor Car Co., York, Pa.
186 Walker & Barkman Mfg. Co., Hartford, Conn.
187 Walk Hill Garage, Mattapan, Mass.
189 Waukesha Motor Co., Waukesha, Wis.
190 Willys-Overland Co., Toledo, O.
191 Zimmerman Mfg. Co., Auburn, Ind.

# *Special Parts Service Offer*

This list may not be wholly complete, but it is to be borne in mind that many parts of a car may be replaced with parts of other cars traceable here for used cars and various purposes through this information.

Pistons, piston rings, connecting rods and valves, as well as carburetor parts, may be interchangeable with standard parts of other machines. Clutch parts, flywheels in some cases and transmission gears are often interchangeable.

Shafts for wheels, as well as propellor shafts, can usually be made in the local machine shops at a cost about equal with that of a supply part from the manufacturer.

Pinion and master drive gears of many cars are the same and the owner or dealer can usually locate a live car with practically the same equipment.

Differentials can be replaced by differentials from other cars with perhaps a slight change in the bearings.

When writing manufacturers of Orphan car parts it is always best to give full details, name, type and number of car, and where possible a sketch showing sizes, etc., of the part desired, for if this is done the manufacturer may furnish a part from another car that can be used to equal advantage.

If unable to locate part desired, write the Automobile Journal Publishing Co., giving all information, particularly sizes and sketch, and the Automobile Journal will try to locate such part.

Owing to rapid changes due to war conditions this list is subject to additions and corrections.

## TORBENSEN FOREMEN FORM ORGANIZATION.

Department heads, foremen and other officials of the Torbensen Axle Co. of Cleveland, O., have formed an organization to be known as the "Foremen's Club of Torbensen Axle Co.," with the object of mutual sociability and business interest of the members and company.

Officers were elected to serve for the next six months as follows: President, J. L. Ballish, assistant superintendent; vice president, F. A. Buchda, chief accountant; recording secretary, C. F. Rubin, stock supervisor; financial secretary, V. Cada, production superintendent; treasurer, T. H. Champion, auditor.

## "NEW ERA BETTER MOTOR REQUISITES" ISSUED.

"New Era Better Motor Requisites," the 1918 catalogue of the New Era Spring and Specialty Co., Grand Rapids, Mich., is being sent out to the trade. It contains brief descriptions and illustrations of the various articles in the company's line, including springs, bumpers, tire carriers, shock absorber, "indestructable" sparking points and Ford accessories, including spring bumpers, tire carriers, wire and wood wheel carriers. "Moto Nose" radiator breather and foot accelerator. A list of cars and the type of bumper required is also given, together with a price list.

## L. M. SANFORD NOW GENERAL MANAGER F. B. STEARNS CO.

L. M. Sanford, who has been manager of General Motors, Ltd., London, since 1911, has been appointed to a similar position with the F. B. Stearns Co., Cleveland, O.

## RECORD SHOCK ABSORBER SALES.

Announcement is made by Edward V. Hartford, Inc., of the heaviest volume of dealers' orders for shock absorbers for November on record, distributed from their new Chicago branch, 1716 South Michigan avenue. In Chicago territory the fall sales have exceeded all previous records. In fact, one dealer whose orders totaled only two sets during the summer months, in November alone increased his orders to 57 sets of Hartford shock absorbers.

## AUCOCK IN NEW PLACE.

Herbert Aucock, for the past seven years a magneto specialist at 210 Columbus avenue, Boston, has moved to new quarters at 185 Columbus avenue, which was formerly occupied by the Motor Parts Co. In his new store and work room he has every facility and equipment to handle any order for new magnetoes or repair work.

## DIXON LUBRICATION CHART PUBLISHED FOR MOTORISTS.

The Joseph Dixon Crucible Co., Jersey City, manufacturers of Dixon's lubricating graphite for motor cars, have published a lubricating chart which covers all the features of the lubrication question. It is so arranged that a motorist can tell at a glance what grade of lubricant is needed for each and every part, no matter what car he is driving. With this information handy motorists can eliminate all of the lubrication troubles that prove a bane to their enjoyment so unexpectedly. Dixon dealers have the charts for distribution or they will be sent upon application to the company's offices.

## GENERAL VEHICLE CO. TO CONTINUE L. I. CITY PLANT.

With respect to certain rumors regarding the General Vehicle Co., Inc., it may be authoritatively stated that while a considerable portion of the Long Island city plant will be devoted to other work than the manufacture of electric trucks, the General Vehicle Co., as well as its manufacture of electric trucks, will continue utilizing such portion of the Long Island city plant as may be necessary for the purpose of continuing its business of nearly 17 years.

# Goodyear Tire Sales Rise $47,000,000

### Akron Company Prepares to Double Authorized Capital Stock in Plan of Financial Rearrangements.

The Goodyear Tire and Rubber Co., Akron, O., for the year ending Oct. 31, 1917, did the greatest volume of business and made the largest net profit in its history. The gross sales were $111,450,643.74, as against $63,950,399.52 during the preceding fiscal year, and the net profits were $14,044,206.10, as compared with $7,003,330.09 in the corresponding period a year ago. Of the total volume less than one per cent. is attributable to war business.

The company's annual report states that plant extensions under way a year ago have been completed, doubling the productive capacity and providing manufacturing facilities sufficient to take care of their estimated growth for several years to come. These improvements were paid for from a sale of $7,500,000 preferred stock and $3,372,000 common stock, while in accordance with the articles of incorporation, as amended, preferred stock amounting to $606,300 par value was redeemed during the year.

At the close of the year there was an unappropriated surplus of $12,763,680.88 subject to Federal taxes for the year. The balance sheet showed total assets of $82,562,591.54. The report contained a summarized table showing the phenomenal growth of the company for the past 10 years, which is printed in part as follows:

SALES EARNINGS, DIVIDENDS AND BALANCE SHEET ITEMS.

| | | | |
|---|---|---|---|
| Sales... | $2,189,749 | $25.232.207 | $111,450,643 |
| Net earnings .. | 120,925 | 3.001.294 | 14,044,206 |
| Cash dividends— | | | |
| Common ......... | | 603,192 | 2,228,342 |
| Preferred | 10,308 | 159,604 | 1,499,039 |
| Balance sheet— | | | |
| Total assets... | 1,442,784 | 13.818.214 | 82,562,591 |
| Total liabilities | 302,598 | 1,116.406 | 21.126,592 |
| Excess of assets | 1.140.136 | 12,701.807 | 61.436.062 |

Goodyear Co. will increase its authorized capital stock from $50,000,000 to $100,000,000. A meeting of the stockholders has been called for Jan. 24, when action on the increase will be taken. The new issue will be half common and the balance second preferred stock at eight per cent. Only $15,000,000 of the preferred will be issued right away and none of the common.

### MASON ANNOUNCES NEW CORD TIRE SOON.

The Mason Tire and Rubber Co., Kent, O., announces it will place a cord tire on the market early in 1918 and will also enter the truck tire field on an extensive scale.

The company's treasury statement shows sales of $1,200,000 and net profits of $181,504.36 for the year. The balance to be placed in surplus amounts to $104,330.22 after deductions for 1916 profits and loss amounting to $23,328.08, income tax reserve of $5076.84, preferred dividends paid during 1917 and preferred dividend reserve totaling $48,485.40. It is shown the surplus for the year amounts to nearly 20 per cent. on the common stock and would have exceeded 25 per cent. except for the 1916 loss incurred during the first few months of operation of the plant, which started but 90 days before the closing of the 1916 fiscal year.

# Defense Board Gives Dealers Assurance

### No Drastic Rules to Interfere with Business Economy Section of National Council Announces.

Following a conference with the Commercial Economy Board of the Council of National Defense, John H. Johnson of the board of directors of the Boston Automobile Dealers' Association, stated that assurances were given that the board does not propose at this time to formulate any drastic rules which would interfere with the business operations of the retail dealers of whom there are between 25,000 and 30,000 in this country.

According to Mr. Johnson nothing was discussed in the conference that would justify any apprehension on the part of the dealers that the economy board believed business required the application of regulatory measures at present.

### COMMONWEALTH FINANCE CORPORATION DIVIDEND.

The directors of the Commonwealth Finance Corporation, 100 Broadway, N. Y., have declared a quarterly dividend on the full paid preferred stock of $1.75 per share. The dividend is No. 4 and is payable on stock of record Dec. 31, 1917, and payable Jan. 15, 1918.

### WILL TRIPLE CAPACITY.

The Williams Foundry and Machine Co., Akron, O., will be able to triple its capacity of vulcanizing equipment with the completion of its new plant Feb. 1. The building is 275x40 feet, three stories high. Expansion and improvement is the program of the new management and the capitalization of the company has been increased to $2,500,000.

### GRANTS FORD WHEEL LICENSE.

The Wire Wheel Corporation of America, Buffalo, N. Y., which controls the Cowles basic patents on demountable and interchangeable wheels, has granted a license to the Hill-Smith Metal Goods Co., Boston, Mass., to manufacture and sell the "Minute" demountable wheels for Ford cars.

# Boston Show Space For Accessory Men

### Preliminary Drawings Made for a List of 29 Members of the M. A. M. More Following.

The Motor and Accessory Manufacturers Association has made the first allotment of space to members for the Boston Automobile Show, March 2-9. The list includes 29 members from various parts of the country, but does not cover all of the space taken by the association and additions will be announced later.

The companies in the first allotment are: Auto Pedal Pump Sales Corp., 456 Fourth Ave., New York City; Brunner Manufacturing Co., Broad and Gilbert Sts., Utica, N. Y.; Century-Plainfield Tire Co., Plainfield, N. J.; Champion Ignition Co., Flint, Mich.; Corcoran-Victor Co., 712 Reading road, Cincinnati, O.; Corning Glass Works, Corning, N. Y.; Detroit Pressed Steel Co., 1800 Mt. Elliot Ave., Detroit, Mich.; Dixon Crucible Co., Jos., Jersey City, N. J.; Du Bois Piston Ring Co., Inc., Albany, N. Y.; Electric Storage Battery Co., 19th St. and Allegheny Ave., Philadelphia, Pa.; Gray & Davis, Inc., Boston, Mass.; Halladay Co., L. P., North Monroe St., Streator, Ill.; Harris Oil Co., A. W., 326 S. Water St., Providence, R. I.; Hartford, Inc., Edward V., 143 Morgan St., Jersey City, N. J.; Kellogg Manufacturing Co., 3 Circle St., Rochester, N. Y.; Kent Manufacturing Works, Atwater, 4937 Stenton Ave., Philadelphia, Pa.; Mann Co., F. W., Milford, Mass.; Metal Stamping Co., 13th St. and Boulevard, Long Island City, N. Y.; Mosler & Co., A. R., P. O. Box M, Mt. Vernon, N. Y.; Moto-Meter Co., Inc., 15 Wilbur Ave., Long Island City, N. Y.; Piel Co., The G., 13th St. and Boulevard, Long Island City, N. Y.; Rand Manufacturing Co., Inc., Haverhill, Mass.; Rowe Calk Co., 36 Pearl St., Hartford, Conn.; Schrader's Son, Inc., A., 783 Atlantic Ave., Brooklyn, N. Y.; Syracuse Malleable Iron Works, 101 N. Geddes St., Syracuse, N. Y.; Vacuum Oil Co., 61 Broadway, New York City; Veeder Manufacturing Co., Hartford, Conn.; Warner Lenz Co., Chicago, Ill.; West Side Foundry Co., Troy, N. Y.

### CADILLAC AUTO TRUCK CO. CHANGES NAME TO ACME

The Cadillac Auto Truck Co., Cadillac, Mich., manufacturers of the Acme line of trucks, has announced a change in its corporate name and hereafter will be known as the Acme Motor Truck Co. This change was deemed advisable as the company adopted the name "Acme" for its product immediately after its organization and all the advertising and literature of the company has constantly been prepared to create a value for the name.

# *Labor and Money Saving Suggestions for the Motor Car Repairman*

### STEERING GEAR REPAIR.

(Figure 45.)

As the steering gear cap is screwed on to the steering gear internal gear case of the Ford car with very fine threads, these frequently wear to such an extent as to allow the cap to slip from the case. Should this happen on a rough road, or when the car is traveling at a rapid pace, there is grave danger, as the operator is unable to govern the wheels. Such an important part should be examined frequently and if wear develops should be immediately attended to. The illustration shows an easy method for repairing this part. Screw or put the cap upon the case as far down as it will go. Then at two or three points in the circumference bore an eighth inch hole and tap for a machine screw. The machine screw should not be so long as to interfere with the action of the steering gears in the housing, but long enough to screw into the case. So long as these screws are in place it is impossible to remove the cap, and the condition of this part may be found very easily by inspection.

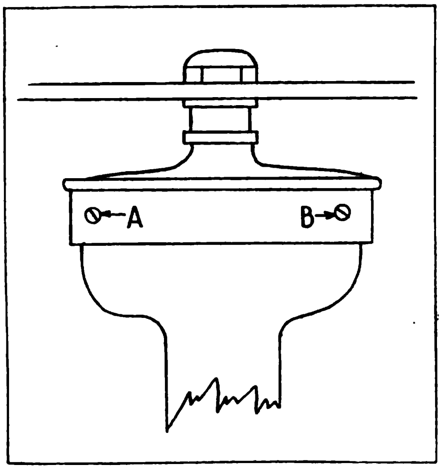


**Fig. 45—Steering Gear Repair.**

### OIL GAUGE.

(Figure 46.)

A number of the older cars still in use are not equipped with oil gauges for indicating the amount of oil in the base of the engine. Practically the only way of keeping sufficiently lubricated on such a car is to open the upper petcock in the engine base and pour in oil until it runs from this opening. When the device illustrated is installed, however, the operator is kept informed as to the condition without crawling beneath the car. It is easily constructed from pipe fittings and a short length of boiler gauge glass.

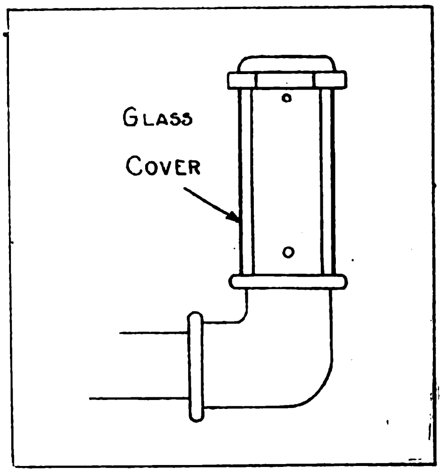


**Fig. 46—Oil Gauge.**

The fittings necessary are a ⅛ inch pipe cap, a pipe nipple ⅛ by six inches, an elbow and a short length of pipe for connecting with the crank case. The construction is clearly illustrated. The gauge glass is clamped between the elbow and cap, over the pipe nipple. In the pipe nipple there should be bored two holes to admit the oil into the chamber between the glass and pipe. It may be found necessary to bore a very small hole in the pipe cap to let out the air, but not large enough to allow the oil to escape. The centre of the glass indicator should be mounted about on a level with the proper height of the oil in the base of the engine.

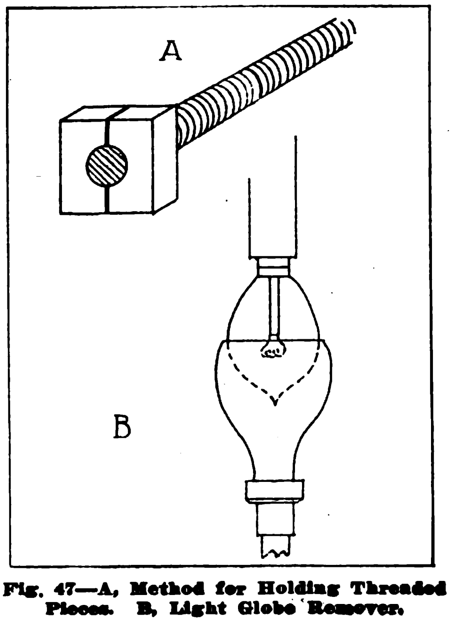


**Fig. 47—A, Method for Holding Threaded Pieces. B, Light Globe Remover.**

### FOOT SCRAPER.

(Figure 48.)

There is just as much reason for removing the mud from the shoes before entering an automobile as there is before entering a house. The accompanying illustration shows an easily constructed scraper made from wood, which is both sanitary and cheap. The strips of wood are 10 inches long, ¾ of an inch wide and ⅜ of an inch thick. Each strip is beveled as shown at A and a heavy wire is run through both ends and the centre as shown at B. The ends of the wire are threaded and fitted with nuts and washers. At C the scraper is shown when assembled. When complete the scraper should be given a coat of paint to match the car.

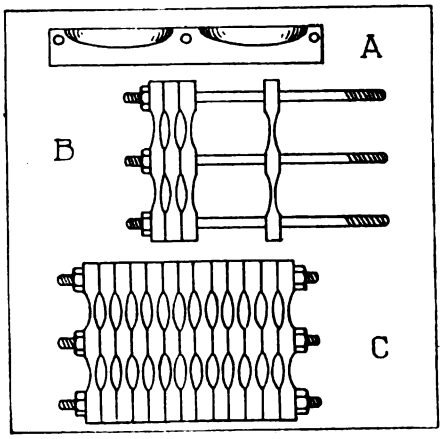


**Fig. 48—Foot Scraper.**

### HOLDING THREADED PIECES.

(Figure 47A.)

Unless great care is exercised in holding threaded portions of bolts, pipes, etc., the thread will be injured by the pressure of the clamps or vise used. Select a nut of the same pitch as the threaded portion, and cut it across as shown in the cut. Put the nut in place and the clamp or vise may be screwed up tightly without injuring the threads.

### LIGHT GLOBE REMOVER.

(Figure 47B.)

Half a horn bulb mounted on an end of a long stick will enable one to reach the light bulbs that are out of reach on the ceiling of the garage, without resorting to the step ladder method. The rubber allows a firm grip on the globe and will not slip while being turned.

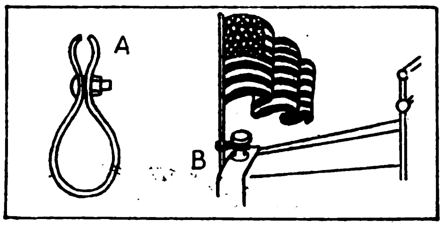


Fig. 49—Flag Holder.

### FLAG HOLDER.

(Figure 49.)

"Be patriotic and show your colors on your automobile," is the general slogan of all Americans today. Anyone can make a flag holder for attaching a flag to the filler cap of the radiator at a very small cost. Get two short pieces of strap iron about ¾ by ⅛ inch and bend them in the shape shown in the illustration. Drill a ¼ inch hole through them and insert a bolt. Remove the radiator filler cap, place the large bend over the filler and with the bolt in position clamp the flag and fitting into place as shown at B.

### DRUM HOIST.

The next time you are stuck in the mud or sand remember that you can fasten a rope to a tree or post, give it a turn around one of the rear wheel hubs and start the engine on either low or reverse, and by holding the rope taut the automobile will pull itself toward the post or tree. The action of the rope upon the hub is the same as that of a drum hoist. Of course it will be necessary to hold the other rear wheel stationary either by a rope or chain, unless it is on solid ground.

### SMALL SCREWS.

(Figure 50.)

We publish another suggestion of a unique and handy method for inserting small screws in inaccessible holes. The illustration is self-explanatory, a piece of folded paper or thin sheet tin may be used. The same method may be used for guiding cotter pins or valve pins into their place.

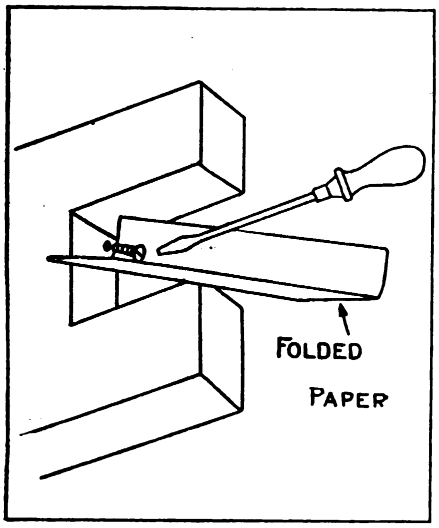


Fig. 50—Suggestion of Method to Use in Replacing Small Screws.

### RADIATOR CAP REMOVER.

(Figure 51.)

Owing to corrosive action of warm water and air, radiator caps frequently stick so hard as to make their removal very difficult without scratching the finish. Procure two pieces of hard wood about ¾ inch thick and cut them into the shape as illustrated at B. Make a loop of iron wire just large enough to slip over the short ends of the wood and into the slots. The device may be used on the brightest finish without leaving a mark. Sketch A shows the device as applied to remove a radiator cap.

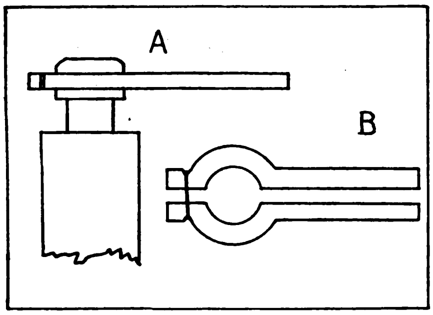


Fig. 51—Radiator Cap Remover.

### SPRING LUBRICATORS.

(Figure 53.)

The life of car springs may be materially lengthened, the riding qualities of the car improved and many squeaks eliminated by keeping the springs well lubricated. Each spring should be kept oiled by using a divice upon it as illustrated. With two bolts fasten a piece of brass or thin wood strip upon each side of the spring, placing a thin strip of felt between the device and the spring leaves. Apply a sufficient quantity of oil to the felt strip to saturate it and run the oil along the leaves where they contact. The felt forms a sort of reservoir and the oil is fed to the spring leaves in small quantities by capillary action.

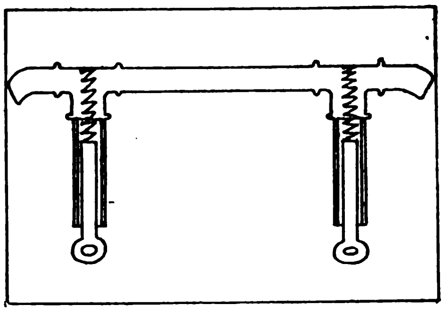


Fig. 52—Home Made Bumper..

### HOME MADE BUMPER.

(Figure 52.)

We give herewith a suggestion for a home-made bumper which may be easily constructed from pieces of pipe and springs. This is designed to be applied to the spring clips, or springs on the front of the car, and by its use the car is kept from being marred by collisions with buildings, other cars and the like. As the illustration is self-explanatory, we will not go into the details of construction. The cost should not be great, but the benefit derived may be of much value.

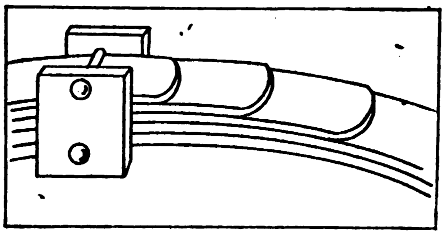


Fig. 53—Spring Lubricator.

### THIEF WARNING.

(Figure 54.)

There is an old saying that "Honesty is the best policy," another to the effect that there is honor even among thieves. It seems as though both of these time worn adages have been placed on the out of order list, as the number of automobile thefts are constantly growing. How to foil the auto thief is a big problem that is attracting much attention at this time. A novel device is used by one of our subscribers that certainly will cause the would-be thief considerable alarm and a big surprise if he should make an attempt to take the car away. At point where the wires to the electric horn on the Ford car pass through the dash board two very fine silk covered copper wires are soldered and insulated in such a manner that the splice is entirely concealed inside the wood dash. The fine wires are lead along the dash, beneath the floor boards to the board beneath the seat. These wires are not tacked to the boards at any point, but glued with rubber cement and then painted with black paint and when in place are very inconspicuous. The two ends are connected with a novel switch arrangement, as shown in the illustration. The head of the screw sticks through the seat board about 1/16 inch. When the driver leaves the car he gives a turn on the screw, which makes the contact as shown at A. When the unsuspecting thief cranks the engine he is greeted by a prolonged blast from the horn, which will continue as long as the engine is running or until the screw is turned back so as to break the connection as shown at B.

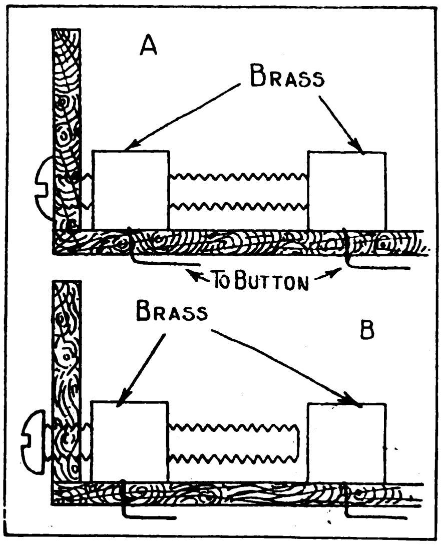
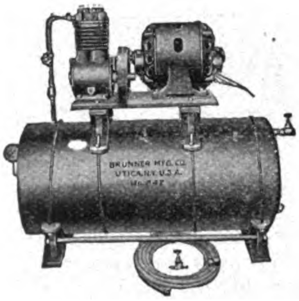


Fig. 54—Switch Arrangement for Foiling the Thief.

# GARAGE EQUIPMENT



Brunner Air Compressor Outfit.

United Engine Portable Bench.

## UNIVERSAL ANGLE PLATE.

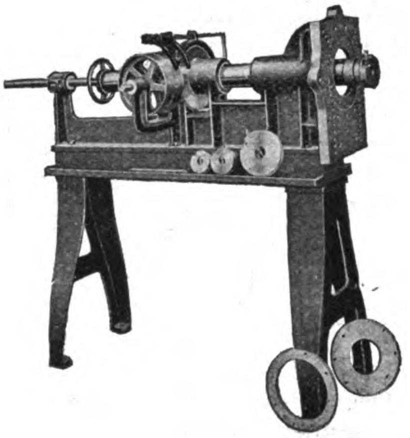
The value of a machine tool in any shop is dependent upon the number of times it can be used and the variety of work that can be done upon it. The Universal Angle Plate is designed to be attached to any plain milling or grinding machine, converting it into a universal tool, upon which may be done many jobs that would have been impossible without the employment of the plate. The table has an adjustment through 360 degrees horizontally and 90 degrees vertically, without disturbing work bolted to it. Graduations with Vernier attachment reading five minutes, permits of its use for especially fine work. The tool is rigid and strongly built and has unlimited possibilities of application for work in connection with lathes, planers, milling machines, shapers, drill presses and grinders.

**Manufactured by Boston Scale and Machine Co., 381-389 Congress St., Boston, Mass. Write for price.**

## MARVEL RE-BORING MACHINE.

Every garage and repair man realizes that the field for automobile repair work is constantly growing. There is a constant call for conservation, with consequent increase in the overhauling of old cars. The cylinders are usually the first part of an engine requiring repairs, which is likely to involve reboring and the fitting of oversize pistons.

The machine illustrated herewith is designed for reboring cylinders and is said to be accurate to with .0005 of an inch. The machine is but 44 inches high and occupies a floor space of 21 by 60 inches. The boring bar is 2 15/16 inches in diameter and has a boring length of 15 inches, long enough for the longest stroke engine. With the machine are furnished five boring or cutter heads with capacities ranging from three inches to eight inches in diameter.



Marvel Reboring Machine.

The machine, when operated at a speed of from 50 to 60 revolutions per minute of the boring bar, will bore a depth of about 1¾ inches per minute. Drive is obtained from tight and loose pulleys to beveled gears with a gear ratio of four to one.

The face plate is designed to hold practically any size cylinder block, and it is claimed that a mechanic can attach, centre properly and bore any ordinary four-cylinder block in from two to three hours with but little practise. Perfect parallelism of the cylinder bores is assured because the face plate is built on the machine, and when once lined up all bores must be the same.

The manufacturers claim that even with the largest and deepest cylinders there is no chatter or vibration in the boring bar.

**Manufactured by Marvel Machinery Co., 1301 South Third St., Minneapolis, Minn. Write for literature and prices.**

## MILLING CUTTERS.

For the use of the all around repair man and machinist the Cleveland Milling Machine Co. of Cleveland, O., publish on the 15th of every month a list of the milling cutters carried in stock and ready for immediate delivery. The knowledge of where to get tools of this kind is very helpful now that the market is so poorly stocked in milling cutters.

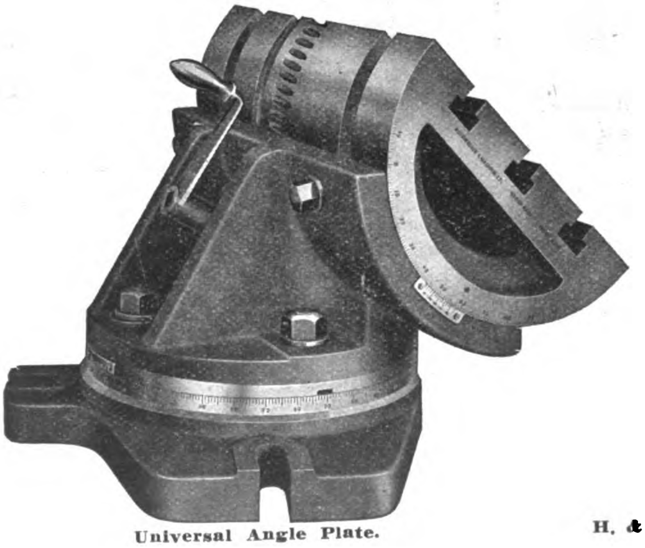
The manufacturers put out a very complete line of plain, side, angular and end mills in both carbon and high speed steel, as well as involute and metric gear cutters, slitting saws and form cutters.

Garage, repair men and machinists interested in cutters are invited to write for the stock list.

## H. & H. STEEL LOCKER.

An employer has a certain responsibility toward his employees and is morally bound to furnish them with some form of locker for their coats, hats, etc. The H. & H. Steel Locker solves the problem of cost as well as space. The locker illustrated is called type B-C, and adds to the attractiveness of coat rooms, as well as provides for spacious, sanitary and safe storage accommodations.

The door frames are made from one solid sheet of No. 14 gauge, cold rolled steel, flanged one inch on both outside edges and formed at the bottom to provide six-inch legs. The back is made of one piece, flanged one inch on both edges, extending from the top to the floor. The sides are bolted to the front and back. The doors are made of No. 14 gauge steel, reinforced with steel channel construction and hung on the frame with three solid two-inch fast pin butts. They are louvered with six openings at top and bottom to admit air for circulation, and if required may be cut with louvers over the whole area. The design of the lockers permits the assembling of practically any number side by side, forming an unbroken surface. Standard sizes ranging from one foot



Universal Angle Plate.

H. & H. Steel Locker.

square and five feet high to two feet square by six feet high may be obtained.

**Manufactured by the Hart & Hutchinson Co., 654 Oliver Bldg., Boston, Mass. Write for prices giving requirements.**

### EGRY GARAGE SYSTEM.

One of the big problems of the small or medium size garage is the keeping of books. With a cumbersome system the cost of bookkeeping is considerable, though an accurate record of every transaction is highly desirable to prevent disputes and keep the customers satisfied.

A machine which is designed for practically any garage is known as the Egry auditor or garage system. This machine is an accurate recorder of every retail transaction.

As each transaction is made the clerk enters, with hard pencil the item, price, date, his key number and purchaser's name on the machine in a space provided for that purpose. The crank is then turned and an original and duplicate copy bill of the transaction is furnished by the machine, the duplicate being given to the customer, the original kept for the records. A third record of the transaction is rolled in the machine and cannot be reached except by special key. This record shows whether the entry was for cash, charged, received on account or paid out, and gives the check number and clerk's number. The record may be used for checking up the original slips, and as the amounts are summarized only totals may be taken for entry into the ledger.

The Egry auditor may be obtained by itself or with cash drawers, which are opened automatically with the turning of the crank.

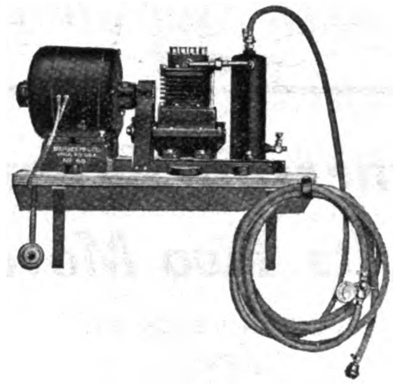
**Manufactured by the Egry Register Co., Dayton, O. Write for prices, giving requirements.**

### SIOUX REFACING TOOL.

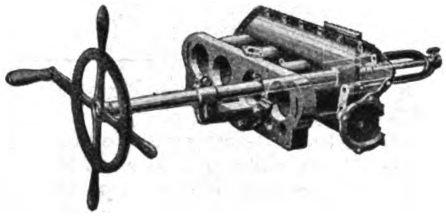
After a certain number of grindings the grinding process for fitting valves to their seats is inefficient, for the reason that the valve and seat surfaces are uneven and contact at but a small portion of their areas. When this happens the best repair is complete refacing of the valve by cutting or reseating of the seat, or both. The tool illustrated is designed for refacing the valve and is designed for use with any valve of standard type, that is, with 45-degree face and up to three inches in diameter.

For valves of 30 or 60-degree faces extra cutters are obtainable. The cutters are made of tool steel, hardened, tempered and cut to the correct angle. The manufacturers claim that no experience is necessary for operating the tool and that finished jobs are obtainable in a surprising short time, even by inexperienced workmen.

**Manufactured by Albertson & Co., Sioux City, Iowa. Price $6 with one 45-degree cutter. Extra cutters, 75 cents each.**



Stationary Tire Inflator.



### HEISER CYLINDER REBORER.

Today when the call for conservation is loudest, every automobile owner is bound to do his bit. He can do his part by keeping his automobile up to efficiency in every way.

An engine with badly worn or scored cylinders is not efficient, but it may be restored by the grinding or reboring of the cylinders and replacement of pistons and rings with those of an oversize.

Illustrated herewith is a machine called the Heiser, improved cylinder reboring machine for Ford engines. This device is fitted with two plates, which clamp on each end of the Ford block. The device is centred with two plugs which fit the cylinders, then the cutting tool is set and the hand wheel turned, cutting away the metal and leaving a smooth, round hole for the new pistons. The manufacturers assert that with this machine the hole is perfect and not tapered at either end. They also declare that four cylinders may be rebored in from 60 to 90 minutes.

**Manufactured by the Heiser Special Tool Co., Kingston, Mo. Price, $38.**

Electric Buffer in Use.

### STATIONARY TIRE INFLATOR.

The new Brunner stationary air machine that has just been put on the market is called the No. 68 Brunner Stationary Tire Inflator. This device has two cylinders 1⅝ inches in diameter, with plungers having a 1½ inch stroke. Each piston is provided with three metal rings and will deliver approximately 1¾ cubic feet of air per minute at a pressure of 125 pounds.

Lubrication is extremely simple and the machine is so designed that there is little danger of the lubricant working into the air line. To reduce this possibility the compressor is provided with a specially designed oil separator.

The pump is driven by a ¼ horsepower compound wound direct current or repulsion induction type alternating current motor. The two units are geared together by means of a compressed cloth pinion gear, which insures quiet running.

The whole outfit is compactly mounted and may be fastened to the wall of the garage, taking up a space of 20½ by 15 by 12 inches and weighing 90 pounds.

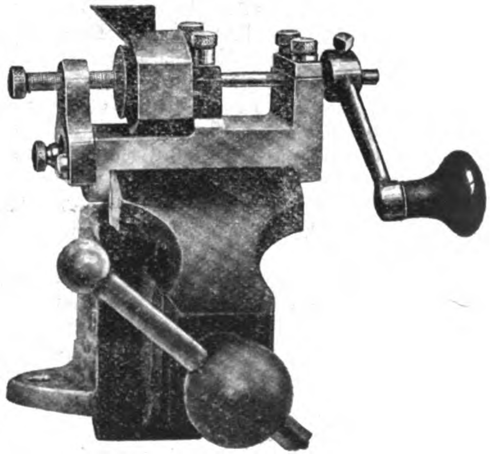
**Manufactured by Brunner Manufacturing Co., Utica, N. Y. Write for prices.**

### ELECTRIC BUFFER.

The Stow Electric Buffer, originally designed for buffing the bright surfaces of automobiles, has many uses around the shop or garage. The outfit consists of an electric motor, which may be had to operate upon any voltage or cycle, direct or alternating current, direct from a lamp socket; a flexible shaft, clamp spindle and connections; also one 3x1 inch buff and one 4x1 inch buff.

In addition to its usefulness as a buffing device for shining brass and metal work, it may be used with small grinding wheels as well. The small size machine takes wheels up to and including 2½x4¼ inches, while still heavier machines are made to take wheels up to and including 4x¾ inches. Proportionately large buffing wheels may be used.

**Manufactured by Stow Manufacturing Co., Binghamton, N. Y. Write for prices stating sizes required.**



Sioux Valve Refacing Tool.

# A Partnership Experience and Its Two Morals

By ELTON J. BUCKLEY.

ABOUT two years ago, in a certain part of Indiana, two men formed a partnership for the purpose of doing a wholesale business. One was an inside man, the other an outside, and both had a wide acquaintance among the firms they must look to for business. It looked like an ideal team. Each man had saved money and both contributed an equal amount to the firm's capital.

The new firm did business from the start, and in six months was making a little money. In a year it was doing exceedingly well and gave every prospect of doing better as time went on. When the business was 18 months old the partners had their first serious disagreement. It was not about anything connected with the business, but about a girl stenographer in the firm's employ. Both men were married. They fell out very deeply over the thing and after several weeks of bitter wrangling, during which the business, of course, suffered, each man made the other a proposition to sell his interest, but neither of the propositions was accepted and a deadlock resulted.

The business was going from bad to worse, when one of the partners went off one day and sold his interest in the firm to another salesman in the same line. The deal involved several thousand dollars, yet both parties decided that they could put it through without counsel—"it was an ordinary sale"—and they got together in a hotel room and signed the papers which together they had drawn up. The buyer paid half of the purchase price in cash and gave a note for the balance. The seller in this case was the partner who had been at fault regarding the stenographer.

Following the deal the buyer of the half interest took his papers to the store of the firm and announced to the remaining member of the partnership that he was his partner. How was that? Why he had just bought out the other man's share. And he showed the paper in corroboration.

The remaining partner did not take kindly to the sale and at once consulted the firm's lawyer as to his rights. He was advised that despite the sale he was not obliged to accept the new man as partner, that he need not work with him or accept him in any way.

**ARE you in need of legal advice? Do you want first class professional service at no cost to yourself? If so, address a letter to Mr. Buckley, in care of the Legal Department of the Accessory and Garage Journal, detailing your troubles as clearly as possible. He will give immediate answer, either on this page, for the benefit of other subscribers who may have the same trouble, or direct by mail, as the inquirer specifies. The writer should sign his full name and address, but only initials or a pseudonym will be published in these columns. The service is free to subscribers to this magazine.**

Just here let me explain this most important drawback of partnership. It is well settled that a partner cannot sell his interest in the partnership to a third party unless the remaining member consents. He can sell something, but it is merely a half interest (if the seller had a half interest) in the firm's assets which remain after the business is settled up. This is from a leading case:

> The legal power of a partner to make a transfer of his interest to a third party is unquestioned. The transferee, however, does not become a tenant in common with the other partner in any specific goods, but acquires only the interest his vendor had, which is his share of the residue after the affairs of the firm are settled and the debts paid, including debts due from the firm to a partner. Such a purchase does not make the buyer a partner in the firm without the concurrence of all the partners, either given expressly or implied from conduct.

To illustrate, A and B are partners. They fall out and B sells his share to C. The business cannot go forward with C in it unless A consents. All that C can legally demand, after buying B's share, is that the business be wound up, debts paid and he be given half the balance. In other words, selling one's share to an outsider without his partner's consent, usually means the destruction of the business. It cannot possibly mean anything else unless the remaining partner agrees.

Now to get back to the Indiana case. The remaining partner served notice on the buyer of the half interest refusing to accept him, and the latter then consulted his own lawyer, who told him the same thing that the other lawyer told his client. He then tried to find the man he had bought from to rescind the deal, but found he had gone to New York with the idea of going to France. He finally found him, but he had spent some of the money and refused to give back the balance on the ground that the deal was bona fide as far as he was concerned.

The buyer then went back to Indiana to see about getting the only thing he could—one-half the assets after the business was wound up. He took proceedings to that end, the business was wound up and its assets sold, as the remaining partner had lost the chance he had had before, of raising the money to take the other half interest over. As would be the case with many businesses were their assets forced to sale, it brought enough to pay back the buyer of the half interest about one-fourth of his money. I can scarcely understand why the remaining partner here could not have gotten money enough from his bank, or somewhere, to buy the half interest and thus prevent the sale, but he seems for some reason not to have been able to.

This little deal had the following evil results:

It cost the buyer of the half interest several thousand dollars in cold cash.

It put the remaining partner to much expense, inconvenience and loss.

It practically destroyed a going, profitable business.

The two morals are plain: First, never go through with a deal involving any substantial sum without counsel; second, do not enter into a partnership without realizing that you cannot sell your interest as a share in a going business, without your partner's consent, which consent will very often be refused. There is only one way to get around this and that is a way I should never advise a client to take, viz.: put in the partnership agreement a clause binding each to accept as partner anybody to whom the other may sell his share. A man would be exceedingly foolish to agree in advance to something that might cause him the deepest embarrassment and regret.

(Copyright, December, 1917, by Elton J Buckley.)

# Activities of Prominent Men of the Industry

## Resignations, Promotions and Other News of the Personnel of Motor Vehicle Manufacturing and Merchandising Companies and Allied Businesses

**George K. Selleck** has been appointed manager of the wheel and rim department of the Standard Tire and Rubber Co. of Boston, Mass. He will look after that branch of the business throughout New England. He has been with the Firestone Tire and Rubber Co. for the past two years.

**E. A. Scheu** is now the eastern traveling sales representative for the King Motor Car Co., Detroit, Mich. He was for five years with the Packard Motor Car Co.

**R. B. Crane**, former sales manager of the Double Fabric Tire Co., has been made manager of the sundry division of the Racine Rubber Co., Racine, Wis.

**W. J. Burchell** is now manager of the retail department of the Automobile Supplies Co. Mr. Burchell was formerly with the Klinger Co. and more recently with the Maxwell Roamer agency.

**Frank L. Van Leer** is representing the Staybestos Mfg. Co. in New York City.

**Edward E. Gerlinger** has become Pacific coast sales manager for the Selden Truck Sales Co., Rochester, N. Y. He established the Federal truck on the Pacific coast and was vice president of the Gerlinger Motor Car Co. at Portland, San Francisco and Seattle.

**Louis Logie**, manager of the Maxwell Motor Co., Ltd., Canada, is also manager of the Canadian Chalmers Co.

**John M. Kearney** has resigned as special representative of the Willys-Overland to take a similar position with the Graham Brothers Sales Co., New York.

**Ralph L. Corey**, formerly assistant to the general manager of the S. F. Bowser & Co., has received a commission as lieutenant in the division of aeronautical engineers, Signal Corps.

C. G. Barbour, Traveling Representative, Bearings Service Co., with Headquarters at Boston, Mass.

**Charles G. Percival**, advertising manager of the Van Cortlandt Vehicle Corporation, eastern distributors for the Peerless eight and motor trucks, has been commissioned a captain in the United States army and has been called to the motor equipment department of the Ordnance Department. Captain Percival was formerly sales manager of the old Cleveland Motor Car Co. of Cleveland, O.

Capt. Charles G. Percival, One of the Best Known Motor Vehicle Men in New England, Now in Motor Equipment, U. S. A.

**C. G. Barbour** and E. G. Norwalk are recently appointed traveling representatives of the Bearings Service Co., Detroit, Mich., in support of the policy of establishing service agencies for the benefit of vehicle owners in all parts of the country.

**Robert L. Ware** is now vice president and treasurer of the Smith Signal Corporation, New York. He will supervise the sales and advertising of the Smith signal and the other devices which the company plan to market.

**John H. Diehl** has been elected a director of the Mason Tire and Rubber Co., Kent, O. He was formerly associated with the Goodrich Tire and Rubber Co. and was sales manager of the Portage Co. for five years.

**E. Harvey Mendel** has joined the sales forces of the Champion Ignition Co., Flint, Mich. He was formerly sales manager of the Rex Ignition Co., New York City.

**H. F. Shepherd**, Des Moines, Ia., has become head of the new accessory and supply department of the Downing Electrical Co. He was for a number of years vice president and general manager of the Hippee States Auto Co.

**Charles H. Minto** is now with the Carlisle Cord Tire Co. as its western manager. His headquarters are in San Francisco. Mr. Minto has been long associated with the tire industry.

**Joseph H. Hoffman** has been made manager of the motor accessory department of Montgomery-Ward Co. of Chicago, Ill. Mr. Hoffman was for several years connected with the motor accessory department of the Simmons Hardware Co.

**J. G. Matlack**, former secretary and general manager of the Ajax Rubber Co., has become president of the Globe Rubber Tire Manufacturing Co., Trenton, N, J. His office is in New York.

**Melvin F. Doty**, formerly with Isaac G. Johnson & Co., Duyvil, N. Y., has been appointed production manager of the Michigan Steel Casting Co., Detroit.

**Cliff Noble** is now connected with the advertising department of the Liberty Motor Car Co. He was formerly with the advertising department of the Hyatt Roller Bearing Co.

**Arthur H. Cummings** has resigned as assistant advertising manager of the B. F. Goodrich Co. of Akron to become advertising manager of the Timken Roller Bearing Co.

**H. B. Young** is now manager of the Cleveland branch of the Chicago Pneumatic Tool Co., Cleveland. The territory extends from Northern Michigan to New Orleans, La.

**P. J. Foster** is now covering Illinois, Wisconsin, Minnesota, North Dakota and Montana for the Northern Rock Island Plow Co. He was for two years assistant manager. His headquarters will be in Minneapolis.

E. G. Norwalk, Traveling Representative, Bearings Service Co., Assigned to Pacific Coast.

**Frank W. Piling, New District Sales Manager, Hupp Motor Car Co., Headquarters, Detroit, Mich.**

**Frank W. Piling** has become the district sales manager of the Hupp Motor Car Corporation in the Middle West. His headquarters are in Detroit. He was formerly eastern district supervisor for the Liberty Motor Car Co.

**A. R. Johnson** has been appointed assistant advertising manager of the Motor Bearings Division of the Hyatt Roller Bearing Co. Mr. Johnson will be associated with W. E. Biggers, advertising manager, in the work of advertising and sales promotion. He was formerly assistant advertising manager of the Cadillac Motor Car Co., Detroit.

**L. A. Sommer** is now vice president and assistant general manager of the Allen Motor Co., Fostoria, O., in charge of engineering and production.

**C. Roy Clough**, who the past year has represented the Stephens car as eastern district sales manager, has been appointed sales manager of the Stephens motor branch of the Moline Plow Co.

**W. M. Blackburn** will be supervisor of estimates for the Standard Parts Co., Cleveland, O. He was formerly with the Warner & Swasey Co., and more recently purchasing agent of the F. B. Stearns Co.

**F. W. Grubb**, Minneapolis, has become associated with the Empire Tire and Rubber Co., distributing automobile accessories in the northwest. He was formerly general sales manager for the Union Supply Co., Toledo, and of the Fulton Grubb Co.

**William A. Carroll**, formerly superintendent of the motor plant of the Milwaukee works of the International Harvester Co., has been appointed engineer and works manager of the Erde Motor Co., Saginaw.

**Howard Emery** has been made general manager of the Aluminum Castings Co.'s interests at Detroit. Prior to this he was manager of the Manitowoc, Wis., foundries and branch offices of the same company.

**Irving G. Thomas** has resigned as production and efficiency engineer of the Hercules Motor Manufacturing Co., Canton, O.

**Edgar Apperson** has been made general manager of the Apperson Brothers Auto Co., Kokomo, Ind. He has been associated with his brother, Elmer, for 25 years in the manufacture of Apperson cars.

**A. G. Mahaffey**, formerly sales manager of the Gray Tractor Co., is now assistant branch manager at Cleveland for the Oakland Motor Car Co.

**W. B. Cole** has been appointed manager of the Seattle branch of the Fisk Rubber Co., taking the place of W. E. Bayless, who has resigned.

**H. P. McQuiston** is now manager of the used car department of the Hudson-Phillips Motor Car Co., St. Louis, Mo.

**H. B. Harper**, general sales manager of the Willys-Overland Co., Toledo, O., will sever his connections with the factory Jan. 1 to become Philadelphia distributor of Overland cars.

**Raymond Davis**, formerly manager of the Mercer Co. of Philadelphia, has taken over the agency for the Roamer car and will distribute around his local territory. He is located at new show rooms, 721 North Broad street.

**B. E. Blackley** has resigned as general sales manager of the Chase Motor Truck Co., Syracuse, N. Y., to direct the sales and advertising of the Larrabee-Deyo Motor Truck Co., Binghamton, N. Y.

**James A. Braden** is again with the Standard Parts Co. as advertising manager, succeeding B. L. Dodge, who has joined the McNaull Tire Co.

**George C. Gordon** has been elected president and treasurer of the Selden Truck Sales Co. The other officers are: president, W. C. Barry, Jr.; assistant treasurer, E. B. Osborn; secretary, R. H. Salmons.

**C. W. Hellen** has disposed of his interest in the Dart Motor Truck Co. to H. H. Henry, who succeeds him as president. Mr. Henry was formerly with the Maxfer Truck Co.

**C. A. Woodruff**, who was connected with the Chalmers company for over eight years, has been appointed general manager of the Saxon Motor Car Co. of Detroit. His appointment has been confirmed by the directors, but no successor to Harry Ford, the retiring president, has been chosen as yet. Creditors have been paid 10 per cent. on their claims Dec. 1 and plans for a similar distribution within a few weeks are being made.

**F. J. Redeman** of the Goodyear Tire and Rubber Co., Akron, O., has been transferred from the Hartford branch to the manufacturers' sales department in the New England district, with headquarters at Boston. E. J. Smith, formerly manager at Providence, has succeeded Mr. Redeman as manager at Hartford, and O. C. Pahline, formerly salesman in the Providence territory, has been placed in charge of the Providence branch.

**J. P. Hunting** is now in charge of equipment sales for the General Asbestos and Rubber Co., Charleston, S. C., as special representative. For 12 years Mr. Hunting has been connected with the industry.

**Anthony Fickel** has been appointed manager of the New York branch of the Mason Tire and Rubber Co. He was formerly manager at Cleveland. W. S. Steiss, formerly manager of the Akron branch, succeeds him at Cleveland.

**Charles S. Ash**, formerly chief engineer for the Wire Wheel Corp. of America, has accepted a similar position with the National Wire Wheel Works, Geneva, N. Y. In addition to looking after the engineering details Mr. Ash will also have complete charge of the manufacture of Pasco wire wheels. The company recently increased its capital stock from $350,000 to $1,000,000 in order to take care of the steadily increasing business.

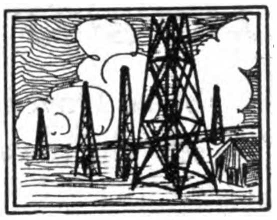
**E. S. Colling** is now on the staff of the automobile sales division of the Vacuum Oil Co., New York City. For a year and a half he was assistant sales manager of the Pyrene Manufacturing Co.

**Clarence W. Wagner** has been promoted to the position of assistant advertising manager of the Allen Motor Co.

**Allan C. Chambers** has assumed the duties of assistant sales manager of the Russel Motor Axle Co. He will undertake both sales promotion and advertising of the company's internal gear drive axles for motor trucks. Mr. Chalmers has been connected with advertising for some time and is well acquainted with the field.

**New Officers of Mitchell Motors Co., Racine, Wis.: Right, D. C. Durland, President, Formerly with the General Electric Co.; Left, R. C. Rueschaw, Vice President, Formerly Sales Manager Reo Motor Car Co,**

# *Securities and General Materials Markets*



## *Automobile Securities Quotations*

| | Nov. 8 Bid | Nov. 8 Asked | Dec. 15 Bid | Dec. 15 Asked |
|---|---|---|---|---|
| Ajax Rubber Co | 50 | 51 | 45 | 48½ |
| J. I. Case T. M. Co., pfd | 82 | .. | .. | 78 |
| Chalmers Motor Co., com | 2 | 4 | 2 | 4 |
| Chalmers Motor Co., pfd | .. | .. | .. | 50 |
| Chandler Motor Co | 57½ | 60 | 62 | 62½ |
| Chevrolet Motor Co | 60 | 63 | 60 | 62 |
| Fisher Body Corp., com | 23 | 30 | 20 | 34 |
| Fisher Body Corp., pfd | 70 | 73 | 75 | 80 |
| Fisk Rubber Co., com | 50 | 60 | .. | 45 |
| Fisk Rubber Co., 1st pfd | 100 | 105 | 98 | 103 |
| Fisk Rubber Co., 2nd pfd | 80 | 90 | 60 | 70 |
| Firestone Tire & Rubber Co., com | 98 | 101 | 97 | 100 |
| Firestone Tire & Rubber Co., pfd | 98 | 101 | 97 | 100 |
| General Motors Co., pfd | 73¾ | 75 | 74⅛ | 75 |
| General Motors Co., pfd | 74¾ | 75 | 74⅛ | 75 |
| B. F. Goodrich Co., com | 35½ | 36½ | 34¾ | 35½ |
| B. F. Goodrich Co., pfd | 98¾ | 99 | 94 | 97 |
| Goodyear Tire & Rubber Co., com | 145 | 150 | 147 | 152 |
| Goodyear Tire and Rubber Co., pfd | 98 | 100 | 97 | 99 |
| Grant Motor Corp | 2 | 4 | 2 | 3 |
| Hupp Motor Car Corp., com | 2⅛ | 2½ | 2 | 3 |
| Hupp Motor Car Corp, pfd | 82 | 88 | 74 | 79 |
| International Motor Co., com | 8 | 11 | 8 | 13 |
| International Motor Co., 1st pfd | .. | 50 | 30 | 50 |
| International Motor Co., 2nd pfd | 15 | 30 | 15 | 25 |
| Kelly-Springfield Tire Co., com | 38¼ | 40 | 37 | 38½ |
| Kelly-Springfield Tire Co., pfd | 80 | 85 | 70 | 80 |
| Lee Rubber and Tire Corp | 14 | 14¼ | 12¾ | 13 |
| Maxwell Motor Co., Inc., com | 21 | 22 | 21 | 22½ |
| Maxwell Motor Co., Inc., 1st pfd | 54 | 56 | 48 | 50 |
| Maxwell Motor Co., Inc., 2nd pfd | 13⅛ | 14 | 15 | 19 |
| Miller Rubber Co., com | 120 | 125 | 125 | 130 |
| Miller Rubber Co., pfd | 98 | 101 | 96 | 98 |
| Packard Motor Car Co., com | 120 | 130 | 110 | 115 |
| Packard Motor Car Co., pfd | 94 | 97 | 92 | 96 |
| Paige-Detroit Motor Car Co | 19 | 21 | 11½ | 13 |
| Peerless Truck and Motor Corp | 9 | 11 | 9 | 13 |
| Portage Rubber Co., com | 115 | 120 | 109 | 114 |
| Regal Motor Car Co | 10 | 20 | 10 | 20 |
| Reo Motor Car Co | 19 | 20 | 15¾ | 16¾ |
| Saxon Motor Car Corp | .. | 6¼ | 6 | 6⅞ |
| Springfield Body Corp., com | .. | .. | .. | .. |
| Springfield Body Corp., pfd | .. | .. | .. | .. |
| Standard Motor Construction Co | 8 | 9 | 7⅝ | 8 |
| Stewart-Warner Speed. Corp | 49 | 50 | 43½ | 45 |
| Studebaker Corp., com | 35⅜ | 35½ | 40½ | 41½ |
| Studebaker Corp., pfd | 84 | 86 | .. | 90 |
| Swinehart Tire & Rubber Co | .. | 40 | 19 | 20 |
| United Motors Corp | 17⅛ | 17⅛ | 14½ | 14¾ |
| U. S. Rubber Co., com | 52 | 52½ | 46 | 47½ |
| U. S. Rubber Co., pfd | 96 | 99 | 93 | 95 |
| White Motor Co | 34⅜ | 34½ | 35 | 36 |
| Willys-Overland Co., com | 17⅞ | 18 | 17¼ | 17½ |
| Willys-Overland Co., pfd | 74 | 75 | 70 | 70½ |

## *General Market Prices*

| | Nov. 12 | Dec. 18 |
|---|---|---|
| Iron, foundry, 1 X, ton | .... | 34.00 |
| Iron, foundry, 2 X, ton | .... | 33.50 |
| Iron, Bessemer, ton | .... | 36.30 |
| Steel, Bessemer, ton | 47.50 | 47.50 |
| Copper, 100 lbs., electric | 23.50 | 23.50 |
| Lead, 100 lbs | 6¼ | 6¼ |
| Tin, 100 lbs | .... | 88 |
| Petroleum, Kan., cr., bbl | 2.00 | 2.00 |
| Petroleum, Pa., cr., bbl | 3.50 | 3.75 |
| Linseed oil, raw | 1.15 | 1.22 |
| Lard oil, prime | 2.10 | 2.30 |
| Fish oil, Menhaden, br | 92 | 95 |
| Sulphuric acid, 60 | 1.50 | 1.50 |
| Cottonseed oil, bbl | 19.00 | 18.50 |
| Silk, raw Italy | .... | .... |
| Silk, raw, Japan | 6.00 | 8.10 |
| Rubber, fine, up-river, Para | 61 | 59 |
| Tire, scrap | 5½ | 4¾ |
| Steel, open hearth, ton | 47.50 | 44.50 |

## DOMESTIC CRUDE OIL PRICES.

The prices of crude petroleum at the wells during the middle of the month of December were:

| | | | |
|---|---|---|---|
| Pennsylvania dark | $3.75 | Corsicana light | $1.90 |
| Mercer black | 2.23 | Corsicana heavy | 1.05 |
| Cabell | 2.72 | Electra | 2.00 |
| New Castle | 2.10 | Henrietta | 2.00 |
| Corning | 2.80 | Caddo, La., 38° | 2.00 |
| Wooster | 2.38 | Caddo, La., heavy | 1.00 |
| North Lima | 2.08 | Healdton | 1.20 |
| South Lima | 2.08 | Moran | 2.00 |
| Indiana | 1.93 | Strawn | 2.00 |
| Princeton | 2.12 | De Soto | 1.90 |
| Somerset 32° | 2.55 | Thrall | 2.00 |
| Ragland | 1.20 | Crichton | 1.50 |
| Illinois above 30° | 2.12 | Canada | 2.48 |
| Kan. & Okla | 2.00 | Humble | 1.00 |
| Plymouth | 2.03 | Cal., 37 grav | 1.32 |

### Naphtha.

| | 10-gal. drums Under 100 cases | 10-gal. drums 100 cases and over |
|---|---|---|
| Benzine, 59-62° | 45½ | 45 |
| Stove | 45¾ | 45¼ |
| Auto, 68-72° | 51¼ | 53 |
| Naphtha, 73-76° | 55¾ | 54¾ |

| | In cans and cases Under 100 | In cans and cases 100-199 | In cans and cases 200-299 |
|---|---|---|---|
| Benzine, 59-62° | 33¼ | 33 | 32¾ |
| 73 a 76° | 43 | 42¾ | 42½ |
| Stove | 33½ | 33¼ | 33½ |
| Auto, 68-72° | 39 | 38¾ | 42 |

## NEW YORK CITY PRICES.

New York City prices for petroleum and its products were:

### Petroleum.

| | | | |
|---|---|---|---|
| Crude, barrels, a gallon | 15a14 | Fuel, 31° | 11 |
| Refined barrels | 15 | Fuel, 34° | 11½ |
| Tank wagons delivery | 10 | | |

### Naphtha.

| | | | |
|---|---|---|---|
| Garages | 24 | V. M. & P. deod., in steel | 23 |
| Consumers | 26 | V. M. & P. deod., in wood | 26 |

### Gasoline.

| | | | |
|---|---|---|---|
| Gas machine, steel | 41 | 68-72° steel | 32 |
| 72-76° | 38 | 68-72° wood | 28 |
| 72-76° wood | 38 | | |

## *Foreign Trade Opportunities*

(Address Bureau of Foreign and Domestic Commerce, Washington, D. C., Giving Number, Which Will Forward Correspondence, Unless Otherwise Stated.)

25,066. An agency is desired by a company in Portugal for the sale of automobiles. Quotations should be made f. o. b. American port. Payment will be made by cash or credit terms. Correspondence may be in English. References.

25,850. A man in Sweden desires to purchase one pleasure automobile. Cash will be paid. Correspondence may be in English.

25,700. A firm in Cuba desires to represent American manufacturers and exporters of silver plated hollow ware, cheap lines of silver deposit on glass and china, bicycles, tricycles and miniature automobiles for children. References.

25,919. A firm in Brazil desires to represent American manufacturers and exporters of moderate priced automobiles and surgical instruments. References.

25,957. An agency is desired by a firm in Norway for the sale of lubricating oils. Quotations should be made f. o. b. New York. Payment will be made by cash against documents. Correspondence may be in English. References.

26,019. A man from Cuba who will be in the United States for a short time desires to represent American manufacturers and exporters of general merchandise, especially dry goods, hardware, tools, automobile supplies and lubricating oils and greases. Correspondence may be in English. References.

# Doughty Tires Track Tested

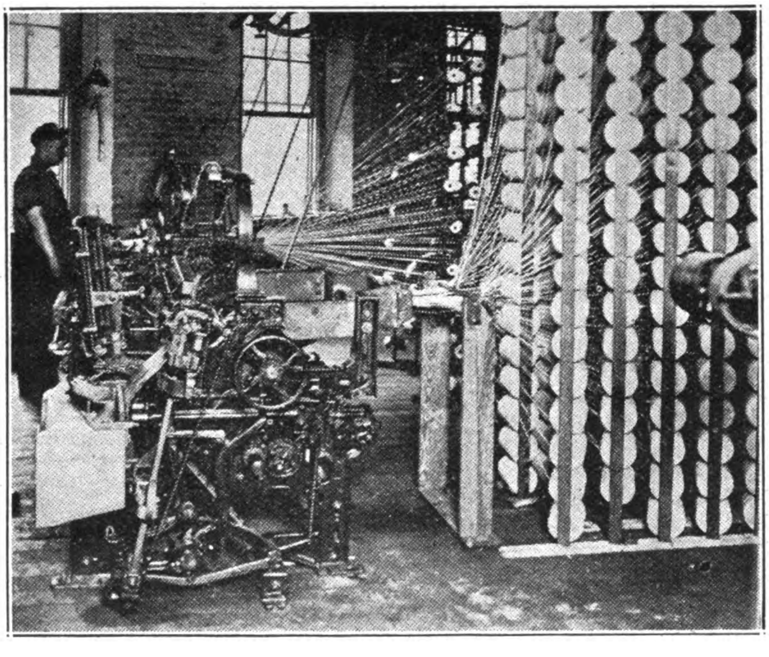
## Shoes Driven 100 Miles in 97 Minutes at Narragansett Speedway Show Comparatively Little Wear

### In Making Fabric Is Woven in Shape of Tread, Wound on Cores in Single Pieces, Having Uniform Tension and Great Strength

PRODUCED by machines and by methods covered by patents issued to Henry J. Doughty, the Doughty Tire Co., Providence, R. I., is manufacturing pneumatic shoes for automobile vehicles that are claimed to have qualities not found in other tires of the same type, these making for endurance and long service, while the manufacturing cost and consequent selling prices are considerably lessened through economies that are peculiar to the process. The claim of the company is that the shoes it produces have greater strength than tires of similar sizes, because the construction is such that when driven internal friction is minimized and deterioration from actual wear much reduced.

Internal friction from distortion of rubber compound under pressure is not comprehended in the statement, which is applied to wear of tire fabric from the flexing of the tube and casing under driving stresses, which in time causes some threads of the fabric to loosen and probably become entirely free in places in the structure, greatly reducing its strength and eventually resulting in bursting from inflation pressure.

Internal friction, according to the manufacturer of Doughty tires, results largely from the variance of tension of tire fabric. When made from woven flat fabric the threads that had originally no stresses upon them are stressed to varying degrees in shaping the fabric upon the core, a condition that obtains no matter whether made by hand or machine. The fabric is drawn tightly on the core and held by the rubber with which it is "frictioned." Under inflation pressure these stresses are intensified and when the tire is flexed from driving, particularly at high speeds, the alternations of tension eventually cause the threads most tightly tensed to break from anchorage, wholly or in part.



Weaving the Fabric for Doughty Tires on Special Loom That Shapes the U Form for the Treads Automatically.

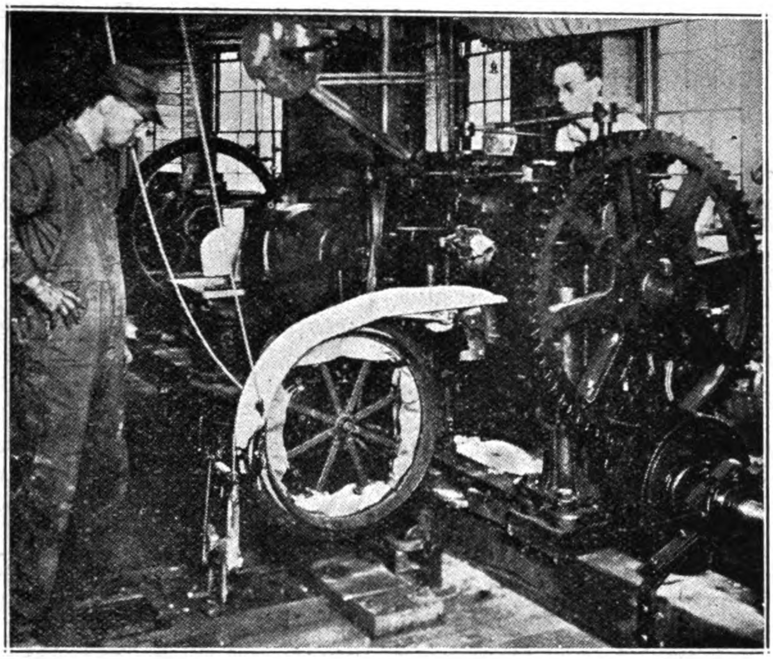
Fabric in tires made by other than the Doughty process is cut bias, so that the threads are placed diagonal to the circumferential centre line. The fabric is put on in layers or plies, a certain number for each size tire, which are consolidated by a thin coating of rubber on one side of each ply to form the carcass. In the curing the plies are firmly united by the rubber becoming semi-fluid from heat and filling the voids of the fabric.

This explanation of conventional tire construction is necessary to inform the reader wherein the Doughty process differs from it. The Doughty tire is what is known as a single piece carcass type. The fabric of the carcass is one piece, instead of a number of pieces, which is claimed to be stronger than were it built of sections. This statement does not consider the adhesion of the plies when consolidated in curing, which is practically the same with all pneumatic tires.

When tire casings are built by other processes the plies are short lengths of fabric, put on with the edges lapped, stretched from one side of the core to the other, either by hand or machine. The tension of the fabric is variable because it must be laid smoothly and the diameter is considerably greater at the tread than at the beads or edges. Originally all tires were built by hand. Then machines were utilized for two reasons, the one that the labor economy was considerable, and the other that the tension upon the fabric is uniform at all times, which is not practically obtainable with hand work. But this machine tension, while constant on the fabric, does not so place the fabric on all parts of the carcass that the tension upon all threads is alike.

As the carcass has largest diameter at the tread the fabric is under greatest tension at the tread when applied, and as the diameter is smallest at the beads the tension is lessened considerably because practically the same area of fabric must be used on a smaller surface area. When in service the weight upon the tire causes the side walls to bend or flex to a far greater degree than the tread and the stresses are continuous, depending to some extent upon the inflation pressure.

The Doughty tire is constructed to an entirely different principle—to the theory that the carcass will



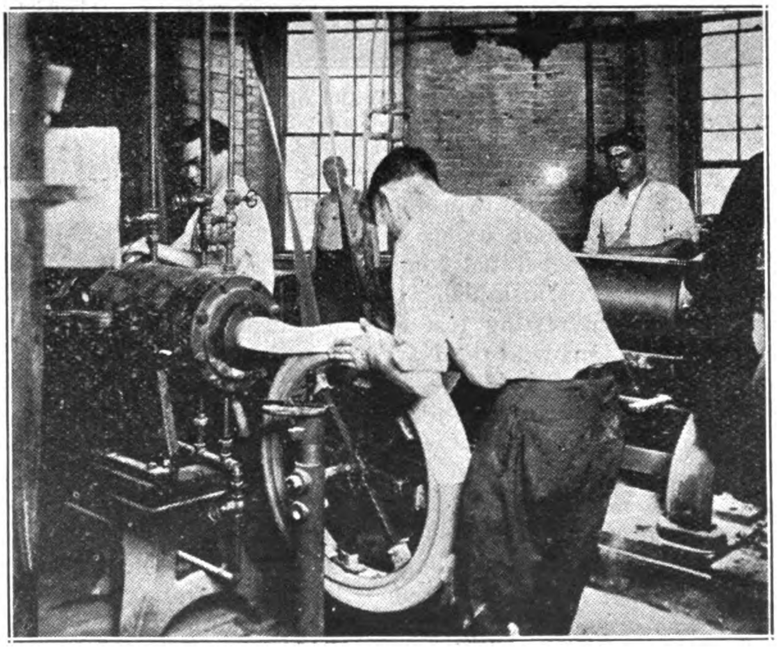
Taking the Frictioned Fabric Direct from the Calender and Making the Carcass of a Single Piece Wound Longitudinally.

have greatest strength if the fabric is placed longitudinally around the core in the same manner one would wind a tape around a disc, so there is no lapping of sections, the warp or longitudinal threads being continuous for the number of layers or or transverse threads extending turns of fabric applied, and the woof from one side to the other. Were the fabric woven flat there would be unequal tension at the beads of the carcass, so the fabric is woven on special looms, flat at the edges and curved in the middle section to a close approximation of the form that it will have when wound on the core. The fabric when placed on the core has practically a uniform tension longitudinally and transversely, and when the tire is built the stresses from flexing are practically the same throughout. The fabric can be woven at any desired width and thickness. Of course the production of the fabric is a special process. The loom is built expressly for this work and it is unique in that the yarn is taken direct from a series of spools, obviating the need of slashers and beamers for producing the warp.

The fabric is woven in pieces that may be any desired length, so that there is a considerable gain with reference to labor and waste. Sections are cut and placed in friction calendering machines, the rolls of which are shaped so that when the fabric is run through them the centre is formed into a U shape that conforms roughly to the largest diameter of the tire across the tread from about the middle of one side wall to the other. In other words, the calendering machines form in the fabric what is the tread of the tire.

The fabric comes from the calenders directly on to the wooden cores on which the tires are built, the claim being that by using the fabric as it is frictioned a much better adhesion is obtained. In building the 30 by 3½ inch tires four complete winds of fabric are placed around the cores, a thin sheet of rubber being wound between the layers or plies. The beads of the tire, which are made separately, are applied after two revolutions of the core. Then two shaping wheels, one at either side, press the fabric over the beads and against the core, forming the carcass with the one operation, there being a finishing strip at either side, which protects the edges of the fabric. The claim is made that the carcass is formed so that it has the shape it will assume when loaded, so that when inflated and under pressure it is not distorted and the stresses upon the tire are not abnormal. Because of this construction the tire is claimed to have unusually long life and endurance.

When the fabric has been applied and cut the carcass is taken, still on the wooden core, to the tubing machine. From this a section of rubber that covers the carcass is forced under pressure and in the shape of a heavy ribbon is hand fitted around it, covering the tread and the side walls to the beads. The ends of the ribbon are cut and butted and then the shoe is ready for the vulcanizing. The wooden core is replaced by an iron core in eight sections that is heated by electricity and is not removed from the vulcanizer. The core is in two groups of four sections each when the vulcanizer is open. As the machine is closed the

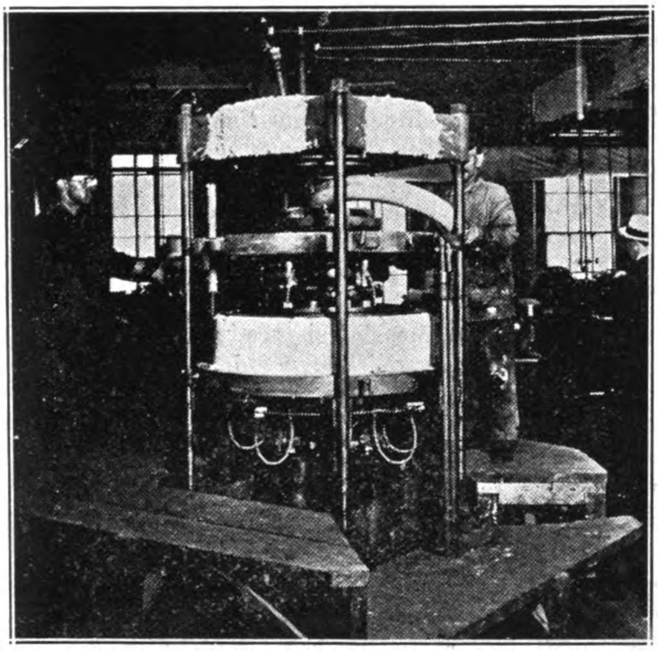


**Putting on the Tread and Side Walls from the Forming Machine, the Third Operation of the Doughty Tire Making Process.**

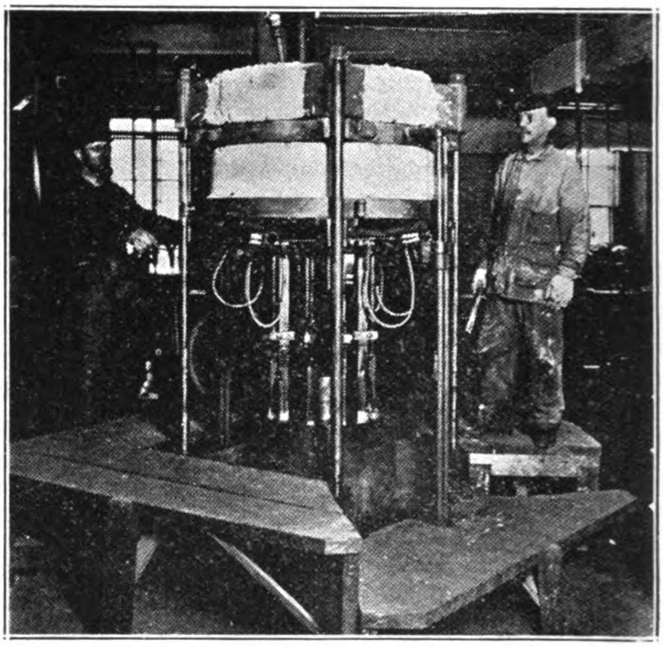
eight sections are expanded against the three outer sections of the mould, which are heated by steam.

The main or centre section of the mould conforms to the tread and the upper and lower sections to the sides and beads. After the core and the mould have been heated their temperature is unchanged while the machine is in use. The time of the cure varies from 10 to 20 minutes, so there is considerable time saved over a process that requires heating the moulds for each tire cured.

The output of the factory, now from 30 to 40 tires a day, is limited by the capacity of the vulcanizing machine, but with another vulcanizer the production can be doubled without increasing the working force. One of the three looms is used, but all will be operated when a second vulcanizer is installed.



Putting the Tires Into the Vulcanizing or Curing Machine, Which Is Continuously Heated by Steam and Electricity.



The Vulcanizing Press with the Mould Containing a Shoe Curing, This Being Final Operation of Doughty Process.

An extremely interesting test of Doughty tires was made at the Narragansett Speedway, Providence, R. I., Nov. 16, to demonstrate endurance. Four new stock tires were driven 110 miles, for the last 100 miles at an average speed of more than 60 miles an hour. The tires, 30 by 3½ inches, were extremely small for racing, so that the circumferential wear was approximately equal to that of driving 34 by four inch tires 65 miles. The car weighed but 1540 pounds and the skidding wear at the turns was more pronounced than were it heavier.

In this test, witnessed by officers of the tire company and a representative of the Accessory and Garage Journal, the first four miles were driven an average under 40 miles an hour. Speed was increased as the engine heated and a 54 mile average was maintained until the ninth mile, when a broken valve caused a tire to deflate. The car was driven a mile and a half with the shoe flat before the tube could be replaced, the same casing being used. The machine was then driven 68 miles in 63 minutes, stopped 50 seconds to repair a speedometer shaft, and driven 32 miles more, the total distance after replacing the right front shoe being 100 miles and the time 97 minutes.

Examination of the shoes showed temperatures comparatively low and no signs of wear or breakage of the fabric. The treads on the right or outside wheels of the car were worn to the fabric, but the front tire, though driven a mile and a half with a valve inside the shoe, was not damaged. The cement track surface, while affording excellent traction, was rasp like in its effect, the treads of the shoes showing diagonal cuts across the surfaces from skidding. The wear, however, was less than expected and the tire makers expressed themselves as extremely well satisfied with the test.

## JEFFERSON ELECTRIC GIVES WARNING.

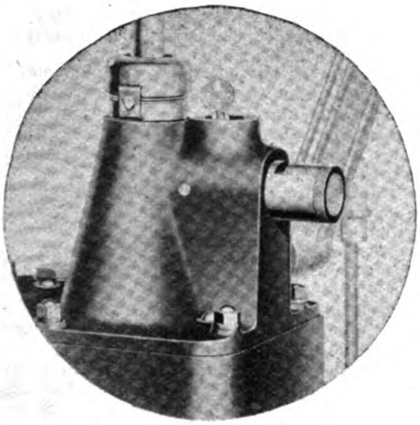
The Jefferson Electric Manufacturing Co., Chicago, Ill., is warning the trade against a man calling himself "R. A. Spencer," who has been representing himself as a salesman of the company among New England automobile supply houses. He secured some of the company's products through jobbers or other channels and has been disposing of them to dealers at about 100 per cent. higher than list price the company informs this journal. The company sells its products only through jobbers and they have no traveling representative by the name of Spencer; neither do any of its representatives sell and deliver goods.

## DETROIT STARTER CO. CHANGES ITS NAME.

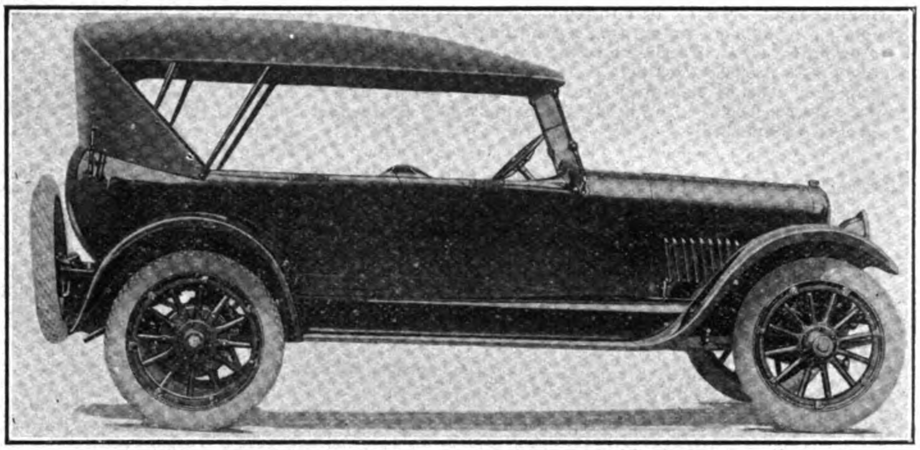
The Detroit Starter Co., Detroit, Mich., has changed its name to the Versal Products Co., the change being made as the various devices produced by the company for some time have borne the trade name "Versal," and manufacture of starters was discontinued some time ago.

A line of electrical apparatus for Fords is manufactured by the company, which enjoys close relations with the Ward-Leonard Co. through an exchange of patents.

# *Paige Discloses New Model Essex Six "55"*



Paige Transmission Lock.



The New Paige Seven-Passenger Model, Made by Paige-Detroit Motor Car Co., Detroit, Mich., and Priced at $1775.

DETAILS OF MODEL 6-55 CHASSIS.

Engine, L head, block.
Bore and stroke, 3½x5¼ respectively.
Make, Rutenber.
Horsepower (S. A. E.), 29.40.
No. Cylinders, six.
Lubrication, force feed and splash.
Clutch, Borg & Beck, three plate dry.
Cooling, pump, zigzag radiator.
Ignition, Remy, waterproof head.
Carburetor, Rayfield.
Fuel feed, gravity.
Starting and lighting, Gray & Davis.
Gearset, three speed, unit, motor.
Rear axle, three-quarter floating.
Wheelbase, 127 inches.
Tire sizes, 35x4½.

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# NEW CONCERNS RECENTLY INCORPORATED.

## Monthly Record of New Business Houses for which Charters Have Been Issued In the Various States and Classified According To Nature of Business.

### Newly Organized Manufacturers of Cars

**Jonesboro, Ark.;** Taylor Jenkins Tractor Co.; $50,000; J. W. Taylor, J. W. Jenkins, Mrs. M. A. Taylor.

**Bridgeport, Conn.;** City Auto Co.; $10,000; to manufacture and deal in automobiles; Francis G. Eisenman, Leo C. Eisenman, John J. Grills.

**Dover, Del.;** The Little Giant Truck Co.; $50,000; to manufacture automobile trucks; C. L. Rimlinger, M. M. Glancy, Clement M. Enger.

**Chicago, Ill.;** Batlett Motor Truck Co.; $2500; John F. Connors, Elrich W. Lademann, William S. Jameson.

**Detroit, Mich.;** All Power Truck Co.; $100,000; to make power wagons; S. V. Dusseau, M. G. Dusseau, J. P. Lavigne.

**Buffalo, N. Y.;** Angola Tire and Rubber Co.; $1,000,000; to manufacture cars and deal in tires and rubber goods; Frank M. Wood, Marcus M. Levery, Stephen C. Kelly.

**New York, N. Y.;** New York Rotary Motor Co.; $1,700.000; A. M. Sullivan, H. and S. S. Meyers.

**Georgetown, O.;** National Tractor Co.; $2,500,000; to manufacture tractors and parts; Woodburn Martin, C. W. Cullen, Albert Worth.

**Warren, O.;** The Trumbull Republic Motor Co.; $10,000; M. W. Kastriner, Ben Feniger, Harvey Spilka, M. Eckstein, P. J. Spitz.

**Dallas, Tex.;** Barrett Tractor Sales Co.; $25,000; Thomas E. Kennedy, A. Ragland, Towne Young, R. Delbert Jones.

### Garages and Repair Shops Newly Chartered.

**Chicago, Ill.;** Auto Repair and Reconstructing Co.; $25,000; John C. Schenk, Martin J. Schenk, Frederick G. Koch.

**Richmond, Ind.;** Central Auto Station; $10,000; to conduct a garage; William F. Spangler, Minnie A. Spangler, Mary E. Faul.

**Athol, Mass.;** The Marble Street Garage, Inc.; $25,000; president and treasurer, Frank W. Fuller; W. J. Kims, W. E. Taft.

**Jersey City, N. J.;** Kelly's Garage, Inc.; $25,000; William J. Kelly, James J. Kelly.

**Brooklyn, N. Y.;** Berry Street Garage, Inc.; $7000; John S. Gross, Julia Gross, Rose Lipkowitz.

**Brooklyn, N. Y.;** Three Star Garage, Inc.; $10,000; E. Cahn, C. W. Bliss, E. A. Birscher.

**New York, N. Y.;** Snowden Garage Co.; $1000; B. and W. Snowden, A. Spadin.

**Cleveland, O.;** The Knickerbocker Garage Co.; $10,000; Frank Ketter.

**Youngstown, O.;** The Spot Garage Co.; $5000; Morris M. Squires.

**Bartlesville, Okla.;** Bartlesville Auto Repair and Supply Co.; $10,000; C. A. McDonald, J. O. Crane, S. B. Sherwin.

### Parts and Fittings Makers Incorporated.

**Brewton, Ala.;** Eclipse Shock Absorber Co.; $10,000; to manufacture shock absorbers for motor cars; W. A. Creek, T. H. McDonnell, James E. McDonnell.

**Wilmington, Del.;** B. & L. Motors Co.; to manufacture all kinds of motors and engines; A. W. Posey, K. G. H. Hayden, H. Bonsall.

**Wilmington, Del.;** H. & L. Motors Co.; $60,000; to manufacture all kinds of motor engines.

**Atlanta, Ga.;** Hanson Motor Co.; $375,000; George W. Hanson, Arthur Burdett, Victor R. Smith.

**Augusta, Ga.;** The Dixie Motor Co.; $10,000; A. B. Prontaut, George E. Best.

**Chicago, Ill.;** Diversey Parkway Motor Exchange; $1200; Charles F. Hudson, C. Harbour, N. Rothblum.

**Indianapolis, Ind.;** C. C. Madison Mfg. Co.; $50,000; to manufacture attachments for traction wheels and other devices; M. O. Madison, G. L. Madison.

**Indianapolis, Ind.;** Raylo Dimmer Co.; to buy and sell dimmers and parts of dimmers for automobile lights; Louis L. Kiefer, George H. Sirp, George W. Ray.

**Detroit, Mich.;** Walker Universal Joint Co.; $350,000; George E. Walker, Adelbert E. Lindley, H. A. Harthaway.

**Detroit, Mich.;** Underhood Motor Heater Corp.; $65,000; Stephen Kaladzie, Samuel V. Kowrank and James B. Glern.

**Greenville, Mich.;** Atlas Electric Storage Battery Co.; to make electric storage batteries; Wm. Petschel, president; H. P. Belknap, vice president; R. C. Ecker, secretary and treasurer.

**Buffalo, N. Y.;** Transcontinental Motor Truck Corp.; $1,250,000; to manufacture truck engines, motor boats; E. S. Stengel, R. A. Schmidt, P. J. Bloxham.

**New York, N. Y.;** Heath Carburetor Corp.; $11,000; A. F. McCabe, F. H. Butehorn, A. E. Moore.

**Carson, Nev.;** The Turbine Muffler Manufacturing Co.; $50,000; to manufacture automobile parts; R. C. Savage, J. G. Ellis. William Muller, J. Smythe, P. B. Ellis.

**Sand Springs, Okla.;** Ozark Motor Co.; $5000; C. H. Lartz, S. T. Richardson, Letititia Lortz.

**Cleveland, O.;** Dual Carburetor and Manufacturing Co.; $100,000; George F. Hart, Joseph Schauweker, C. E. Petot, James T. Schauweker, Harry H. Baer.

**Dayton, O.;** P. T. Wheel Co.; $50,000; G. H. Gorman, E. J. B. Gorman, A. M. Leoni, A. B. B. Gorman, O. B. Brown.

**Philadelphia, Pa.;** Roach Automobile Rotary Safety Brake Co.; $1,000,000; to manufacture safety brakes; Mahlon Van Booskirk, Henry R. Heyl, A. P. Stevenson.

**Dallas, Tex.;** Yesner Motor Co.; $10,000; Leon M. Yesner, Henry T. Levy, Victor H. Hexter.

**Burlington, Wis.;** Burlington Motor Truck Co.; $50,000; to manufacture truck attachments for Ford chassis; G. C. Rausch, George W. Waller, W. G. Rausch.

**Wausau, Wis.;** National Auto Wheels Corp.; $50,000; M. Philopp, E. J. Coarper, Robert R. Steritzky.

## Dealers in Automobiles and Motor Trucks

**Blue Island, Ill.;** Blue Island Motor Service Co.: $2500; Charles E. Schick, Robert R. Beard, Edna Modrow.

**Carbondale, Ill.;** Phillips Fly Motor Car Co.; $5000; Otis B. Phillips, William C. Fly, James E. Mitchell.

**Chicago, Ill.;** Maibohm Motors Sales Co. of Illinois; $25,000; to deal in automobiles.

**Galva, Ill ;** Galva Motor Co.; $20,000; George A. McClintock, Warren O. Houghton, Merrill M. Kistner.

**Highland Park, Ill.;** Continental Car Co.; $20,000; Albert Latta, O. W. Summers, Irving Milter.

**Quincy, Ill.;** Baldon Automobile Service Station; $10,000; B. F. Baldon, A. W. Henning, S. A. Hubbard.

**Anderson, Ind.;** Roof Motor Specialty Co.; $50,000; Robert M. Roof, James A. McMyler, William N. Durbin.

**Ottawa, Kan.;** Ottawa Motor Sales Co.; $10,000; John Nelson, S. B. Weidner, Edward Nelson.

**Cynthiana, Ky.;** Harrison County Motor Car Co.; $20,000; Edgar Cragg, Thomas Northcutt, W. A. Parish.

**Lexington, Ky.;** Mammoth Motor Car Co.; $30.000; Brooks Taylor, J. C. Taylor, J. J. Taylor.

**Louisville, Ky.;** Haynes Motor Sales Co.; $10,000; Charles Tway, W. S. McDonald, Milton Lavely.

**Boston, Mass ;** Gibbons Commercial Body Co.; $100,000; to deal in automobiles; Margaret F. Fitzgerald. Katherine A. Finley. W. L. F. Gilman.

**Detroit, Mich.;** Aluminum Welding Works; $5000; Louis B. Crusoe, L. F. Rogers, W. D. Newman.

**Joplin, Mo.;** The Bell Motor Co.; $20,000; W. J. Bell, Della Bell.

**St. Louis, Mo.;** Ollie E. Haupt; $1200; Ollie E. Haupt, Carl W. Schoenig, Emil G. Haupt.

**St. Louis, Mo.;** Mid-West Motor Car Co.; $2000; to conduct an automobile and accessory business; T. A. Leigh, C. F. Westcoat.

**St. Louis, Mo.;** Standard Auto Service; $40.000; Harry G. Hurd, George Graupner, George C. Hurd.

**Kansas City, Mo.;** Dort Sales Co.; $25,000; Roy R. Bush, William H. Morgan, Chester B. Magill.

**Plainfield, N. J.;** Somerset Motors Corp.; $25,000; to manufacture motor cars; C. Holt, Jr., F. L. Holt, I. L. Englehart.

**Paterson, N. J.;** H. M. Smith Co.; $2000; to deal in automobiles; Harry N. Smith, Isidore Friedman, Archie Friedman.

**Amsterdam, N. Y.;** Universal Motor Sales Co.; $15,000; E. Reamer, F. B. Benjamin, F. S. Mosher.

**New York, N. Y.;** The Ever Ready Auto Service; $10,000; J. H. Bacon, F. S. Wolsington, W. H. Willis.

**New York, N. Y.;** Militer Corp.; $1,000,000; to deal in automobiles, airplanes; E. McMillis, A. W. Britton, G. V. Reilly.

**Brooklyn, N. Y.;** Arrow Motor Transport Co., Inc.; $25,000; to conduct a general trucking business; William H. Hocker, Sidney W. Davidson, Athol Cammann.

**New York, N. Y.;** Select Motor Car Co., Inc.; $1000; to deal in automobiles; Ethel F. Halle, Louis Halle, John F. Quirk.

**Hendersonville, N. C.;** The King Motor Car Co.; $20,000; H. M. King, Ben Few, H. F. Ward.

**Leaksville, N. C.;** Twin City Motor Co.; $50.000; S. L. Wilson, L. L. Martin, H. Barker.

**Akron, O.;** The Billow Auto Delivery Co ; $10,000; George W. Billow, Edwin L. Billow. Charles F. Billow, H. L. Snyder. G. W. Silber.

**Chillicothe, O.;** Chillicothe Transit Co.; $10,000; Charles P. Salen, Harry E. Johnson, B. Grebe, M. Fahey, Frank V. Nord.

**Cleveland. O.;** The Cleveland Auto Service Co.; $10.000; Joseph M. Bernstein.

**Cleveland. O.;** Jordan-Ohio Co.; $50.000: H. D. Cushman, James H. Griswold. H. D. Palmer, J. W. Smith. James Formanek.

**Cleveland, O.;** Service Auto Storage Co.; $500.000: A. M. Gordon, Joseph Newman, Irwin Harris, Henry A. Beckerman, S. M. Davis.

**Dayton, O.;** Jones-Gist Co.: $10.000: B. W. Jones, C. C. Fisher, G. G. Gist, Nora L. Jones, E. Josephine Jones.

**Kenton, O.;** Northway Motor Organization; $30.000; Arthur M. Rosenthal. Frank Schinderwolf, C. C. Patton and C. M. Casena.

**Lima, O.;** The Lima Auto Clearance Co.; $10.000: H. K. Heineger. C W. Counsellor, F. R. Pangle, Cloyd J. Brothers.

**Youngstown, O.;** Frederick Taxicab and Transfer Co.; $50.000: A. J. Auhrov. Fred G. Fredericks, A. E. Burky, Reuben Smith. W. W. Diefenderfer.

**Youngstown, O.;** Nash-Pittsburgh Motor Co.; $125.000; S. A. Pfau. Ben F. Spencer. L. B. Webb, E. M. Mincher, William E. Pfau.

**Zanesville, O.;** Zanesville Motor Car Co.; $10,000; R. G. Farmer, E. A. Evans, M. Randolph, Edward R. Meyrer, Charles H. Duvall.

**Ardmore, Okla.;** May-Watkins Motors Co.; $12,000; Coy Watkins, John W. May. Don Harris.

**Muskogee, Okla.;** Auto Security and Mortgage Co.; $10,000; R. G. Coatsworth, J. E. Coatsworth, L. H. Holmes.

**Shawnee, Okla.;** Read Motor Co.; $10,000; E. P. Read, E. D. Read, E. E. Gholson.

**Oklahoma City, Okla;** Heckethorn Bradley Motor Sales Co.; $5000; F. E. Heckethorn, Edward Howell, C. M. Bradley.

**Greenville, S. C.;** Dixie Automobile Co.; $5000; W. B. Stafford, C. B. Scott.

**Sisston, S. D.;** Carlbert Co.; $30,000; W. F. Carlson, N. J. Carlson, E. J. Vaage.

**Norfolk, Va.;** The Norfolk Automobile Sales Co.; $5000; to conduct an automobile business; president, R. H. Raiford; secretary, W. H. Starkey.

**Charleston, Wash.;** The Purves Auto Service, Inc.; $50,000; H. G. and Della M. Purves.

**Edmonds, Wash.;** The Edmonds Auto Co.; $3000; P. J. Larson, L. E. McReynolds, H. F. Leiste.

**Madison, Wis.;** Washington Motor Car Co.; $5000; Charles F. Bender, E. H. Whitcomb, E. G. O'Brien.

**Thermopolis, Wis.;** Lee Auto Co.; $20,000; Arthur K. Lee, S. S. Lee, Bert Lawson.

## Accessories, Equipment and Supplies

**Wilmington, Del.;** Fort Wayne Tire and Rubber Manufacturing Co.; $500,000; to manufacture and sell automobile tires and tubes.

**Wilmington, Del.;** Tire Shop; $65,000; Walter Brinton, Robert O. Cook, Nathaniel W. Howell.

**Decatur, Ill.;** Mixrite Carburetor Co.: $10,000; C. H. Gillespie, E. H. Williams. A. A. Granger.

**Joliet, Ill.;** The Challenge Spark Plug Co.; $10,000; William Heggie, Curt L. E. Mueller, Coll McNaughton.

**Joliet, Ill.;** Motors Supply Co.; $50,000: Folger Adam, Ole Eddy, C. T. Carlson, S. Trachman, Henry H. Schick.

**West New York, N. J.;** Union Tire Co.: $6000; Emma Tilfenbronner, Catherine E. Weber, Henry B. Fischer.

**New York, N. Y.;** Cromwell Production Co.; $250,000; to produce gasoline from casing head gas; A. Rust Oppenjeim, S. C. Worthem, A. S. Mortimer.

**New York, N. Y.;** Hub Auto Tire Co.: $10,000; H. Smolen, A. Krometes, L. J. Levey.

**New York, N. Y.;** Mercury Tire Co.; $5000; E. Salisbury, M. M. Burnet, P. J. Osborn.

**Pearl River, N. Y.;** Mogul Tires Co., Inc.; $2,500,000; to manufacture motor car tires and other rubber goods; Arthur R Oakley, William E. Shields, Jr., Richard A. Webster.

**Akron, O.;** The Akron Seamless Rubber Tire Co.; $100,000; Albert Bleecker, W. V. Smith, R. E. Weaver, Dean B. Hale, Mott K. Cook.

**Cleveland, O.;** Charles J. Deckman Distributing Co., Inc.; $10,000; to deal in auto supplies; J. Deckman, H. J. Dietz.

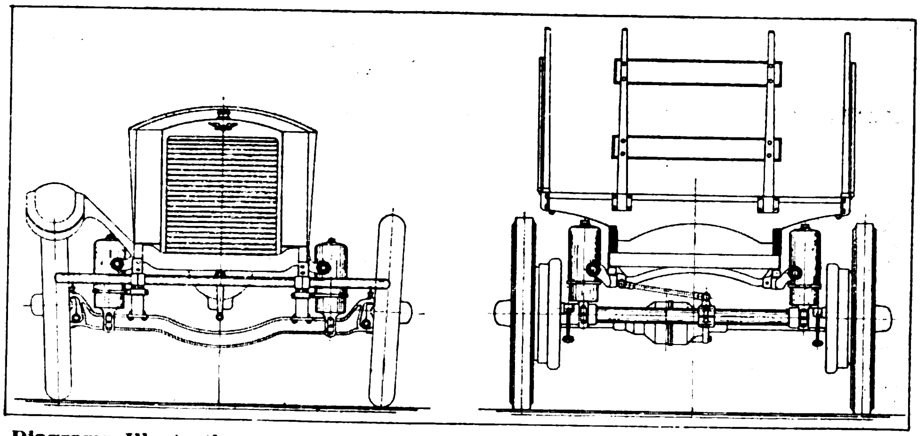
**Cleveland, O ;** Owen Tire and Rubber Co.; $800,000; Charles S. Reed, W. K. Gardner, George S. Eichelberger, C. H. Beckerman, S. M. Davis.

**Cleveland, O.;** Public Service Tire and Supply Co.; $10,000; H. J. Alperin, Stella Alperin, M. M. Gibbon, C. W. Dille, Joshua Thorne.

**Warren, O.;** Eakin Auto and Supply Co.; $5000; C. A. Yahrling, C. M. Eakin, M. Eakin, O. L. Reeder, O. B. Reeder.

**Spokane, Wash.;** The Simplex Auto Wheel Co.; organized with capital of $1,000,000; manufacturing and supply; M. O. Field, S. D. Lemley and W. A. Black.

## *New Springless Suspension Device*

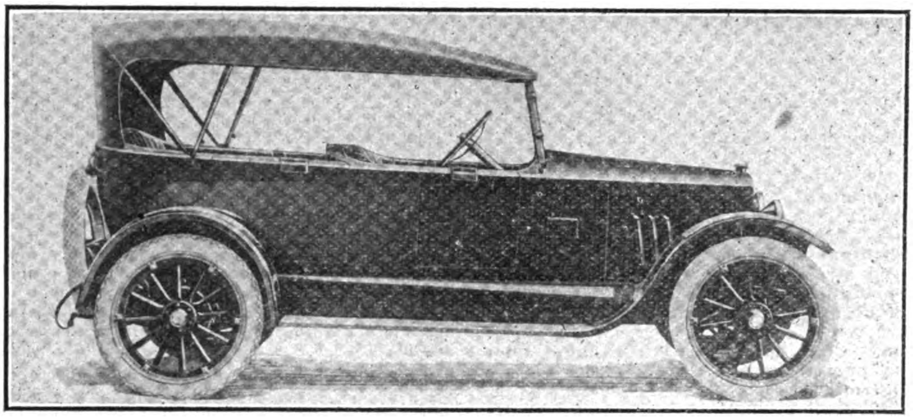


**Diagrams Illustrating Mechanics of the Air-O-Flex Springless Suspension, Manufacture of Which for Commercial Cars First Is Being Started by the Air-O-Flex Corporation, Detroit, Mich. The Drawings Show: At Left, Front of Car Illustrating Manner of Suspending the Chassis Frame on Air-O-Flex Cylinders; at Right, Rear View, Exhibiting Manner of Installing the Cross Radius Rods.**

# *Hackett Announces 1918 Ultra Four Model*

### MECHANICAL FEATURES OF HACKETT CHASSIS.

**Engine, four cylinder, L head.**
**Bore and stroke, 3¾x4¼ respectively.**
**Horsepower (S. A. E.), 22.5.**
**Lubrication, splash pressure.**
**Fuel feed, vacuum.**
**Cooling, thermo syphon system.**
**Ignition, secondary distributor and coil.**
**Starting and lighting, Dyneto two-unit.**
**Clutch, disc.**
**Gearset, three speed, Grant-Lees.**
**Rear axle, semi-floating.**
**Wheelbase, 112 inches.**
**Tire sizes, 32x3½.**
**Body, speedboat.**



**Manufactured by the Hackett Motor Car Co., Jackson, Mich. Called the Ultra Four and a Neat Job Selling at $960. Distinctive in Body Lines and Colors.**

# RECORD OF NEW BUILDING PLANS IN DECEMBER

## Contracts Made and Plans Contemplated for Alterations or the Building of Garages, Repair Shops, Service Stations and New Plants.

## Contemplated Plans and Specifications.

**Montgomery, Ala.;** George A. Bennis; one-story brick garage; $10,500. Lessee, Robert B. Maxwell Co.

**Santa Ana, Cal.;** Oliver Halsell, 312 W. Fifth street; one-story garage, 40x100; $4000.

**Watsonville, Cal.;** J. F. Harris; one-story garage, 115x152.

**Boulder, Col.;** W. S. Withers, 12th and Walnut streets; one-story garage; $15,000.

**Denver, Col.;** E. H. Radetsky; one-story garage, 75x125; $10,000.

**Denver, Col.;** J. E. Young, 146 Logan street; one-story garage, 75x140; $12,000.

**Hartford, Conn.;** Joseph Glanz; one-story garage, 40x46; $4000.

**Hartford, Conn.;** Jacob Siegel, 125 Homestead avenue; two-story garage, 40x76.

**New Haven, Conn.;** Morris Batter, 20 Winter street; one-story garage, 25x55.

**New Haven, Conn.;** Antonio Williams, 15 George street; one-story garage, 50x40.

**Stamford, Conn.;** Coleman Brothers; two-story garage and shop, 25x30; $2500.

**Washington, D. C.;** Chris Heurich; one-story garage at 1208-14 E. street: 76x125.

**Washington, D. C.;** B. Stanley Simmons, Real Estate Trust building; three-story automobile show room and storage station, 60x103; $45,000.

**Washington, D. C.;** C. C. Calhoun and James Sharp; one-story brick garage; $3700.

**Atwood, Ill.;** F. A. Gilmore; one-story garage, 40x40.

**Bluffs, Ill.;** Lewis Motor Co.; one-story garage, 40x40.

**Cairo, Ill.;** Guy P. Eichenberger; one-story garage, 50x120; $10,000.

**Chicago, Ill.;** Louis Bromberg, 1337 N. Oakley avenue; one-story garage, 75x125; $30,000.

**Chicago, Ill.;** Harry Holton, 140 S. Dearborn street; one-story garage and chauffeur's quarters, 50x100; $10,000.

**Chicago, Ill.;** G. A. Pearson, 1930 N. Keystone avenue; one-story garage, 60x80; $15,000.

**Chicago, Ill.;** D. Wallace Hamilton, 1519 E. 68th street; one-story garage; $35,000.

**Chicago, Ill.;** Marshall Field & Co., State and Washington streets; two-story garage; $60,000.

**Chicago, Ill ;** Kenderdine Campbell Co., 3265-67 Fullerton avenue; two-story garage and show room, 48x150; $30,000.

**Hardin, Ill.;** Jacob L. White; one-story garage, 40x60.

**Homer, Ill.;** De Long Motor Co.; Fithian, Ill.; one-story public garage, 40x80; $12,000.

**Lincoln, Ill.;** Laugellier Motor Co.. 112 S. McLean street; one-story public garage and sales room, 50x138; $30,000.

**Paxton, Ill.;** Thompson & Sons: one-story garage, 50x120.

**Quincy, Ill.;** Connell & McKone Co., Hancock and Adams streets; one story sales room and service station, 200x60; $50,000.

**Tremont, Ill.;** F. Hinman; one-story public garage, 60x120; $10,000.

**Indianapolis, Ind.;** Insley Manufacturing Co., Olney and St. Clair streets; one-story private garage, 26x70; $2000.

**Kirklin, Ind.;** J. A. Harding; one-story garage, 45x50.

**Mt. Vernon, Ind.;** Keck & Gonerman; two-story public garage, 70x140.

**Walkerton, Ind.;** Rudd Motor Co.; one-story public garage, 50x120; $10,000.

**Allerton, Ia.;** Charles Miner; one-story garage, 20x28.

**Cedar Rapids, Ia.;** E. M. Scott, Security Savings Bank; one-story public garage; $8000.

**Des Moines, Ia.;** Consign Motor Truck Co.; garage; $10,000.

**Des Moines, Ia.;** F. E. and C. C. Hubbell; one-story garage, 100x169; $90,000.

**Dixon, Ia.;** Riefe & Kuehl; one-story garage, 80x80.

**Dubuque, Ia.;** C. W. Connell; one-story garage, 50x90.

**Eagle Grove, Ia.;** William Wehrihin; two-story public garage, 40x100; $7000.

**Fontanelle, Ia.;** E. D. Walsworth and J. F. Baueder; one-story public garage, 44x132.

**Goldfield, Ia.;** Whyte Auto Co; one-story garage, 70x140.

**Sioux City, Ia.;** J. H. Bolstein. 2100 Court street; one-story garage, 77x127.

**Winfield, Ia.;** George Blummer; one-story public garage, 78x148.

**Cottonwood Falls, Kan.;** J. A. Mann; one-story garage, 45x110.

**Douglas, Kan.;** C. E. Bailey; one-story garage, 50x100.

**Hugoton, Kan.;** A. E. Derrick; one-story garage, 60x105; $10,000.

**Independence, Kan.;** Independence Motor Co.; one-story garage and sales room, 50x125; $20,000.

**Osage City, Kan.;** Miller & Schroeder; one-story garage, 54x140; $10,000.

**Wamego, Kan.;** L. B. Leach; one-story garage, 80x120.

**Wichita, Kan.;** Golden Rule Oil and Refining Co.; one-story filling station, 20x35.

**Louisville, Ky.;** P. M. Andriott & Sons; one-story concrete garage; $900.

**Paducah, Ky.;** B. Owen; one-story garage; $3500.

**Shelbyville, Ky.;** Owen & Moore: one-story public garage, 100x100; $10,000.

**Dexter, Me.;** Frank Brown; one-story sales room; $10,000.

**Fort Kent, Me.;** Hetherington & Mallett; one-story sales room and service station; $10,000.

**Howlton, Me.;** Berry & Benn; one-story garage; $25,000.

**Lewiston, Me.;** Holmes & Bedell; one-story garage, 64x75; $15,000.

**Portland, Me.;** C. P. Dalton; one-story garage and sales room, 50x90; $20,000. Lessee, Gilson Auto Co.

**Portland, Me.;** Albert and R. H. Rines; one-story garage, 55x100; $30,000.

**Baltimore, Md.;** J. M. Curren, 501 N. Pulaski avenue; one-story public garage; $20,000.

**Baltimore, Md.;** Colonial Development Co., Park Heights and Cottage avenue; one-story garage, 301x38; $8000.

**Baltimore, Md.;** William H. Perry; one-story garage at 2340 Hartford avenue, 30x118.

**Bedford, Mass.;** William A. Carroll, 211 Hawthorne street; one-story garage, 49x100; $10,000.

**Boston, Mass.;** Judith Zusman, 434 Washington street; one-story public garage, 60x100.

**Boston, Mass.;** Herman A. Himberg, Blue Hill avenue and Walkhill street; one-story garage, 78x103.

**Boston, Mass.;** Joseph Vantole, 1337 Hyde Park avenue; one-story salesroom, 59x84.

**Medford, Mass.;** Jason Green, 930 Exchange building, Boston, Mass.; one-story public garage, 203x52; $20,000.

**Medford, Mass.;** Patrick A. Cadogan, care F. H. Gowing, 18 Tremont street, Boston; one-story public garage, 20x50.

**Newton, Mass.;** Edward McKenney, 373 Washington street; one-story garage, 113x82; $35,000.

**Somerville, Mass.;** Edward T. McCanty, 72 Rush street; one-story garage, 50x40.

**Springfield, Mass.;** J. K. Dexter, 27 High street; one-story garage, 64x20; $3500.

**Springfield, Mass.;** Tait Brothers, 132 Cass street; one-story garage, 28x160; $22,000.

**Springfield, Mass.;** Cleopas Vadnais, 691 Summer avenue; one-story garage, 50x100; $8000.

**Springfield, Mass.;** O. C. Cummings, 34 Grand street; one-story garage, 35x20.

**Springfield, Mass.;** F. Peter Mosher, 51 Worther street; one-story public garage, 45x90; $5000.

**Bay City, Mich.;** S. P. Cranage; one-story private garage, 22x26; $1200.

**Detroit, Mich.** Jacob Schevitz, 195 E. Ferry avenue; one-story garage, 135x40; $12,000.

**Detroit, Mich.;** Peter Plattes, Lycaste and Jefferson avenue; one-story public garage, 30x51; $2000.

**Detroit, Mich ;** American Car and Foundry Co.; one-story garage, 56x88.

**Detroit, Mich.;** O. H. Kalveff, 254 E. Elizabeth street; one-story garage, 60x95.

**Detroit, Mich.;** Eastern Motor Sales and Service Co.; one-story garage at Russell and Antietam street, 120x128.

**Detroit, Mich.;** American Motor Sales Co.; one-story garage, 85x170.

**Jackson, Mich.;** Buick Sales Co.; one-story garage, 56x100.

**Lenox, Mich.;** M. E. Fitzgerald; one-story garage, 37x40.

**Bingham Lake, Minn.;** Kingsley & Bradley; one-story garage, 60x40.

**Minneapolis, Minn.;** H. S. and W. P. Christian; one-story garage at 1517 Hennepin avenue, 50x146.

**Pipestone, Minn.;** C. S. Miller; one-story garage, 75x80.

**Rochester, Minn.;** J. E. Thompson; two-story garage, 60x140; $30,000.

**Watertown, Minn.;** Watertown Auto Co.; one-story garage, 50x80.

**Vicksburg, Miss.;** Powell Motor Co.; one-story garage, 75x100.

**Clinton, Mo.;** Sims Motor Co.; one-story garage and sales room, 50x120; $15,000.

**Cuba, Mo.;** Barnett & Rockline; one-story garage, 60x80.

**High Hill, Mo.;** E. F. Nebel; one-story garage, 40x60.

**Kansas City, Mo.;** Scavitt Estate Co.; automobile service building; $38,000.

**Kansas City, Mo.;** George Strother, 906 Scarritt building; one-story garage, 75x140; $20,000.

**Linneus, Mo.;** J. W. Head; one-story garage, 80x120.

**St. Louis, Mo.;** American Packing Co., 3842 Garfield avenue; one-story private garage, 40x130; $8000.

**Union, Mo.;** Raymond Purschke; one-story garage, 42x70.

**Versailles, Mo.;** E. A. Crewson and J. A. Petty; one-story garage, 70x85.

**Warrensburg, Mo.;** Orl Stillwell; two-story garage, 80x120; $15,000.

**Cook, Neb.;** H. H. Schacht; one-story garage, 55x100; $18,000.

**Edgar, Neb ;** McKinney Garage; one-story garage, 50x140.

**Kearney, Neb.;** J. W. Patterson; two-story garage, 56x125; $35,000.

**Lexington, Neb.;** Rosenberg Hardware Co.; one-story garage, 100x150.

**Lincoln, Neb.;** Earl J. Hitchinson, 1515 S. 24th street; one-story garage; $3000.

**Lincoln, Neb.;** National Security and Investment Co., 622 Security Mutual Life building; one-story garage, 150x142; $18,000.

**Omaha, Neb.;** T. H. Andrews, 3104 Cuming street; one-story garage; $4000.

**Omaha, Neb.;** Alex Beck, 208 Keeline building; one-story garage, 70x109; $20,000.

**Omaha, Neb.;** Nebraska Storage Battery Co., 2203 Farnam street; one-story auto service station, 95x132; $20,000.

**Omaha, Neb.;** C. W. Calkins, City National Bank building one-story garage, 132x100; $30,000.

**Omaha, Neb.;** John Latenser, 630 Bee building; seven-story garage and sales room, 132x132.

**Omaha, Neb.;** Home Builders, Brandeis Theatre building; two-story garage, 66x132; $20,000.

**Ord, Neb.;** A. B. Huff; one-story garage, 100x117; $7000.

**Atlantic City, N. J.;** B. Ireland, Guarantee Trust building; one-story public garage, 60x150; $10,000.

**Bloomfield, N. J.;** Frederick Sadler, 613 Bloomfield avenue; one-story auto sales room and garage, 46x84.

**East Orange, N. J.;** John Verrier, 564 Orange street, Newark, N. J.; 19 one-story individual garages; 50x125; $6000.

**East Orange, N. J.;** M. Naiman, 344 Main street; 11 one-story individual garages; $3500.

**Elizabeth, N. J.;** Starter and Battery Service Co., 240 Central avenue, Newark; one-story garage and service station, 69x48 and 163x31; $15,000.

**Jersey City, N. J.;** Frank Crahay, 3572 Boulevard; one-story public garage, 42x98; $6000.

**Newark, N. J.;** Peter W. Smith, 735 S. 11th street; one-story garage, 58x83; $7800.

**Newark, N. J.;** Jacob Brown, 204 Bergen street one-story garage, 27x50; $2000.

**Newark, N. J.;** Welden Realty Co., 192 Woodside avenue; 16 individual garages; one story each, 72x73; $4000.

**Newark, N. J.;** Gregorie Corevele, Harrison, N. J.; one-story public garage, 25x50; $2500.

**Newark, N. J.;** R. Rubin, care M. B. Silberstein, 123 Springfield avenue; one-story public garage, 41x100; $5000.

**Albany, N. Y.;** N. Schmitter, 458 Delaware avenue; one-story public garage, 46x130; $20,000.

**Brooklyn, N. Y.;** M. Misakar, 65-67 Bristol street; one-story private garage, 30x55; $3000.

**Brooklyn, N. Y.;** Anthony King, 59 West street, New York City; one-story garage, 122x121; $30,000.

**Brooklyn, N. Y.;** Abraham Tonkies, 16 Tompkins avenue; one-story garage, 50x100; $7500.

**Brooklyn, N. Y.;** C. T. Martin, 16 Court street; one-story garage, 50x120.

**Brooklyn, N. Y.;** Nathan Bergstein; one-story garage, 70x100; $8500.

**Brooklyn, N. Y.;** Mona Realty Co., 625 Nostrand avenue; one-story garage, 40x100; $12,000.

**Brooklyn, N. Y.;** E. M. Adelsohn, 1776 Pitkin avenue; one-story public garage, 50x131; $15,000.

**Brooklyn, N. Y.;** John Novella, 34 Withers street; one-story public garage, 25x100; $5000.

**Brooklyn, N. Y.;** Edward M. Walsh, 227 Clinton street; one-story garage, 50x100; $10,000.

**Brooklyn, N. Y.;** Leon A. Kellner, 1538 Union street; one-story garage, 20x56.

**Brooklyn, N. Y.;** Estate Louis Beer, 149 Remsen street; one-story garage, 110x219; $30,000.

**Brooklyn, N. Y.;** Annie Rosen, 27 Whipple street; one-story garage, 82x100; $18,000.

**Brooklyn, N. Y.;** Foster Improvement Co., 2027 Douglas street; one-story public garage, 90x105; $25,000.

**Brooklyn, N. Y.;** Madison Construction and Improvement Co., 97 Pulaski street; one-story garage, 65x97; $10,000.

**Brooklyn, N. Y.;** Barney Woller and Barney Potter, 320 Rutledge street; one-story garage, 100x123; $20,000.

**Brooklyn, N. Y.;** L. Novick, Bath avenue and 25th street; one-story garage, 118x36.

**Brooklyn, N. Y.;** William T. Hutcheson; one-story garage, 80x100.

**Brooklyn, N. Y.;** Pure Oil Co., 233 Varick avenue; two-story garage, 40x60 and 20x80; $10,000.

**Brooklyn, N. Y.;** Pohl Abbott Construction Co., 180 Montague street; one-story garage, 131x152; $85,000.

**Brooklyn, N. Y.;** Annie C. Hoff, 720 Fourth avenue; one-story garage, 46x25; $25,000.

**Brooklyn, N. Y.;** Frank Jiancarlo, 1470 67th street; one-story garage, 72x100; $35,000.

**Brooklyn, N. Y.;** Electric Welding Co.; one-story garage and machine shop; $6500.

**Brooklyn, N. Y.;** Greenwood Construction Co., 748 Shepard avenue; one-story public garage, 50x100; $11,000.

**Brooklyn, N. Y.;** F. M. Kaiser, 8117 16th avenue; two-story public garage, 50x100; $20,000.

**Brooklyn, N. Y.;** Harris Reisler, 293 Stone avenue; one-story public garage, 110x165; $18,000.

**Brooklyn, N. Y.;** Krasbow Construction Co., 188 Montague street; one-story garage; $2500.

**Brooklyn, N. Y.;** Belmont Powell Holding Co., 361 Stone avenue; one-story auto show room, 50x90; $15,000.

**Brooklyn, N. Y.;** M. C. K. Construction Co., 2168 Dean street; one-story public garage, 100x100; $25,000.

**Brooklyn N. Y.;** Fidelity Metal Co., 190 Diamond street; two-story private garage, 35x100; $10,000.

**Brooklyn, N. Y.;** P. Schwartz, care Christopher Bauer, 801 Manhattan avenue; one-story public garage, 30x76; $8000.

**Brooklyn, N. Y.;** Lapidius Brothers, 80 Georgia avenue; one-story garage and storage station; $3500.

**Brooklyn, N. Y.;** Johnson Construction Co., 71st street and 10th avenue; 16 one-story garages, 16x18 each; $8000.

**Brooklyn, N. Y.;** Maria Volpe, 135 Bayard street; one-story garage, 42x103; $10,000.

**Brooklyn, N. Y.;** L. M. Schner, 59 S. Fourth street; one-story garage, 58x100; $12,000.

**Buffalo, N. Y.;** Jacob Fromet, 211 Floyd street; one-story garage, 25x100; $5000.

**Buffalo, N. Y.;** M. Cancilla, 120 Georgia street; one-story public garage, 31x41; $8000.

**Buffalo, N. Y.;** Louis Greenstein, 1334 Prudential building; one-story public garage; 46x80.

**Buffalo, N. Y.;** Max G. Beieri, 405 German Insurance building; one-story private garage, 20x20.

**Buffalo, N. Y.;** Buffalo Clement Co., 110 Franklin street; one-story garage, 34x132; $4000.

**Flushing, L. I., N. Y.;** George C. Norman, 85 Ithaca street, Elmhurst, L. I.; one-story garage, 103x154; $20,000.

**Forrest Hills, L. I., N. Y.;** Continental Avenue Garage Co.; one-story garage, 50x185; $20,000.

**Long Island City, L. I., N. Y.;** G. Cilento, 660 Ninth avenue; two-story garage, 50x90; $15,000.

**Niagara Falls, N. Y.;** Carborundum Co.; one-story garage, 28x87; $5000.

**Niagara Falls, N. Y.;** Estate James Martin, Falls and First streets; one-story public garage, 33x100; $3000.

**Niagara Falls, N. Y.;** W. M. Richardson, 1321 Ontario avenue; two-story garage and service station, 69x90; $12,000.

**New York, N. Y.;** G. Rossani, 110th street and First avenue; one-story garage, 30x100.

**New York, N. Y.;** Moore & Landsiedel, Riverside drive and 134th street; one-story garage, 50x200.

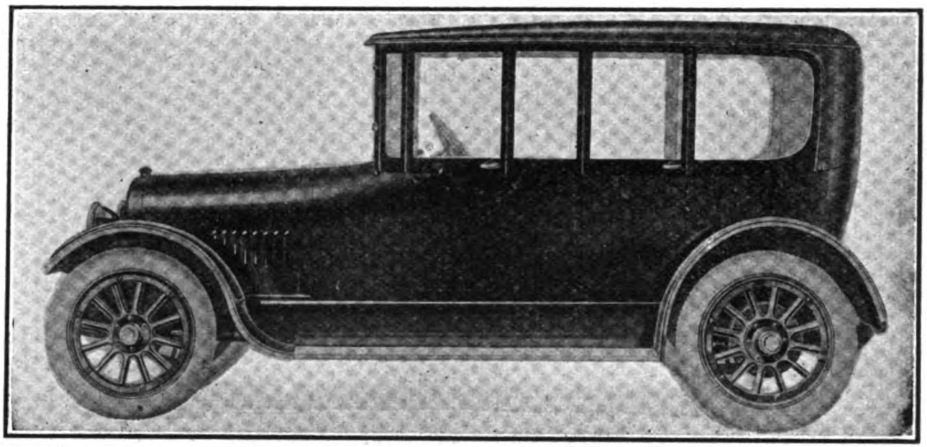
**New York, N. Y.;** Tiebout Avenue Co., 1009 E. 180th street; one-story garage, 25x135; $8000.

**New York, N. Y.;** Josephine J. Schnulmacher, 402 E. 108th street; two-story public garage, 100x150; $50,000.

**New York, N. Y.;** H. E. Champoli Operating Co., 116 W. 190th street; one-story garage, 58x119; $10,000.

**New York, N. Y.;** Benenson Realty Co., Webster avenue and 166th street; one-story garage, 308.9x88; $30.000.

**New York, N. Y.;** Morris Kirsch, Bisten road and Jefferson place; one-story garage, 94x67; $15,000.



**Pilot Six Forty-Five, Five-Passenger Demountable Sedan, Made by the Pilot Motor Car Co., Richmond, Ind. More Fully Described in the Automobile Journal, Dec. 10, 1917.**

### FEATURES OF THE PILOT CHASSIS.

**Engine, six cylinder, L head, cast en bloc.**
**Bore and stroke, 3⅛x5.**
**Horsepower (S. A. E.) rating, 23.4.**
**Lubrication, splash, reinforced by pump.**
**Cooling, centrifugal pump, cellular radiator.**
**Ignition, Delco.**
**Carburetor, Tillotson hot air jacketed.**
**Starting and lighting, Delco.**
**Clutch, dry plate disc.**
**Gearset, three speed, unit with engine.**
**Rear axle, full floating type.**
**Wheelbase, 120 inches.**
**Tire sizes, 35x4½.**

**New York, N. Y.;** Samuel Hirsh Estate and Alfred Dutibillit Estate, Far Rockaway, L. I., N. Y.; one-story garage, 75x118; $20,000.

**New York, N. Y.;** Ward Baking Co., 437 E. 53rd street; one-story garage, 83x200; $20,000.

**New York, N. Y.;** Estate Anna K. Finch, 21 E. 84th street; two-story garage; $18,000. Lessee, Glock Contracting Co., 455 Pleasant avenue.

**New York, N. Y.;** S. J. Kessler, 529 Courtlandt avenue; three-story garage, 100x100; $50,000.

**New York, N. Y.;** Jacob Ruppert, Inc., 1629 Third avenue; one-story garage, 105x201; $30,000.

**New York, N. Y.;** P. Schalita, care Samuel Brooks, 110 W. 40th street; two-story garage, 100x100; $50,000.

**Northville, N. Y.;** Harry W. Van Arnam; one-story garage and sales room; $3000.

**Rochester, N. Y.;** Max Cohen & Bros., 233 Hudson street; one-story garage, 32x50.

**Rochester, N. Y.;** Silas A. Hale, 5 Rundel park; one-story garage, 36x40; $1500.

**Rochester, N. Y.;** John Wesp, 4963 Lake avenue; one-story garage, 56x36; $2000.

**Syracuse, N. Y.;** E. D. Slawson, 818 E. Fayette street; one-story public garage, 83x123; $10,000.

**Tuxedo, N. Y.;** A. M. Beard, 1½-story private garage, 67x28.

**Gastonia, N. C.;** J. M. Holland, care Holland Realty and Investment Co.; two-story garage and show room, 200x30.

**Rock Mount, N. C.;** J. B. Green and D. S. Smith; one-story garage, 25x90; $4000.

**Cincinnati, O.;** James Gilligan, 607 West Eighth street; one-story commercial garage, 72x60; $10,000.

**Cincinnati, O.;** T. Toeld; three-story service and sales station, 50x150.

**Cleveland, O.;** C. C. Parsons Cartage Co., 6521 Carnegie avenue; one-story garage, 20x24; $1500.

**Cleveland, O.;** Wicklow Construction Co., care A. B. Williams, 700 Marshall building; two-story public garage, 140x160.

**Columbus, O.;** Frank C. Long, 1986 Indianola avenue; one-story garage, 18x22; $2000.

**Columbus, O.;** C. N. Davis, 82 Patterson avenue; one-story garage, 47x36; $2500.

**Lima, O.;** Allen County, Thomas A. Welch; one-story garage, 42x72; $3000.

**Antlers, Okla.;** J. M. Cornelius; one-story garage, 50x120.

**Apache, Okla.;** Lake Oil Co.; one-story garage, 50x100; $5000.

**Boynton, Okla.;** W. T. Cole, Muskogee, Okla.; one-story garage, 50x120; $7000.

**Collinsville, Okla.;** J. D. Ward; one-story garage; $16,000.

**Oklahoma City, Okla.;** H. E. Bagly; three-story garage, 50x40; $25,000.

**Okmulgee, Okla.;** Clay C. Smith; two-story auto sales room and office; $16,000.

**Ringling, Okla.;** G. A. Fletcher & Co., Main and Third streets; one-story brick garage and sales room, 50x140; concrete floors, electric lighting; $8000.

**Tyron, Okla.;** Norman Dixon; one-story garage, 50x100.

**Tulsa, Okla.;** Osage Motor Co.; one-story garage, 25x65.

**Grants Pass, Ore.;** Mrs. K. M. C. Neill; one-story garage, 25x50.

**Portland, Ore.;** Freidman Brothers; one-story garage, 100x100; $25,000.

**Salem, Ore.;** Dodge Automobile Co.; one-story garage, 57x90.

**Allentown, Pa.;** George Fisher, 418 Gordon street; one-story private garage, 18x30; $3000.

**Allentown, Pa.;** Frederick Petrillo, Pennsylvania and Union streets; three-story private garage, 21x46; $6500.

**Bethlehem, Pa.;** Iva Krause; one-story private garage, 25x25; $3000.

**Bethlehem, Pa.;** Howard Magee, Wilbur Trust Co, Fourth and Broadway; one-story private garage, 36x42; $2000.

**Bristol, Pa.;** Harry H. Headley; one-story garage, 30x25.

**Columbia, Pa.;** Lincoln Highway Garage; one-story public garage, 50x136; $15,000.

**Easton, Pa.;** W. E. Farrell, 22 Centre square; one-story garage, 21x21; $1500.

**Eddystone, Pa.;** J. M. Kennedy, 1001 Chestnut street, Philadelphia; one-story public garage; $5000.

**Harrisburg, Pa.;** H. Claster, 302 Market street, and L. W. Kay; one-story garage, 100x164; $15,000.

**Pittsburgh, Pa.;** H. C. Stamsforth; one-story garage; $15,000.

**Philadelphia, Pa.;** Philadelphia Rapid Transit Co., 810 Dauphin street; one-story garage, 30x50; $5000.

**Philadelphia, Pa.;** M. T. Lucas, 200 N. Fifth street; one-story public garage, 98x200.

**Pottsville, Pa.;** John Raring, 22 S. Central street, and William Plifer, 25 S. Central street; one-story public garage, 70x40; $10,000.

**Sharon, Pa.;** Charles Leon; one-story garage, 71x84.

**Uniontown, Pa.;** Treverton Shamokin and Mt. Carmel Hospital; one-story private garage, 26x34.

**Uniontown, Pa.;** Tri-State Garage Co.; two-story commercial garage, 50x50, rear wing one-story, 40x160; $15,000.

**West Pittston, Pa.;** M. W. O'Boyle, Miner's Bank building; one-story private garage, 24x42; $4000.

**West Pittston, Pa.;** Kenneth P. Wilde, 211 Warren street; one-story public garage, 87x125; $20,000.

**Wilkes-Barre, Pa.;** J. B. Alexander; one-story private garage, 22x25; $2000.

**Providence, R. I.;** R. I. Rocco M. Famiglettl; one-story garage, 40x70.

**Providence, R. I.;** David Rosenblatt; one-story garage at 87 State street; 47x38.

**Providence, R. I.;** Antonio Abruzzese; one-story garage, 38x65.

**Canova, S. C.;** S. E. Roof; one-story garage, 30x70.

**Greer, S. C.;** Greer Garage; one-story garage; $3500.

**Midland, S. C.;** C. E. Maeder; one-story garage, 30x36.

**Nashville, Tenn.;** Mrs. L. P. Carnes; one-story brick garage; $20,000.

**Austin, Tex.;** A. J. Zilker; two-story brick and reinforced concrete garage, 92x128; $40,000.

**Ferris, Tex.;** Ferris Motor Co.; one-story concrete garage, 100x125; $12,000.

**Wichita Falls, Tex.;** Para Vulcanizing Co.; one-story garage, 50x150.

**Salt Lake City, Utah;** Sherman Auto Co.; automobile building; $85,000.

**Richmond, Va.;** P. J. White, Merchant Bank building; eight one-story garages; each 14x17; $15,000.

**Wheeling, W. Va.;** Everybody's Garage Co.; one-story public garage, 50x150.

**Davenport, Wash.;** Campbell & Marcellus; one-story garage, 75x100.

**Kelso, Wash.;** Peters Machine Works; one-story garage, 70x100.

**Seattle, Wash.;** Ballou & Wright, 12th avenue and Pike street; one-story garage, 60x113.

**Seattle, Wash.;** Sunset Motor Co.; one-story garage, 112x60; $7000.

**Green Bay, Wis.;** Lucia Brothers Motor Co.; two-story garage, 125x160; $10,000.

**Lake Mills, Wis.;** Lake Mills Automobile Co.; one-story garage, 60x132.

**Milwaukee, Wis.;** Hugh A. Masuhr, 1053 Buffum street; one-story garage, 42x100.

**Milwaukee, Wis.;** Blue & Hartung; one-story garage, 37x100; $10,000.

**Milwaukee, Wis.;** William Young, care Charles W. Valentine, 428 Jefferson street; one-story private garage, 24x38; $3000.

**Milwaukee, Wis.;** Chemical Institute, 204 Pleasant street; one-story garage, 20x80; $1800.

**Milwaukee, Wis.;** Henry Voelz, 82 Michigan street; one-story garage, 21x75; $5000.

**Milwaukee, Wis.;** Leiser & Holst, Germania building; one-story private garage, 20x34; $2500.

**Port Washington, Wis;** Schmidt Brothers; one-story garage, 60x100.

**Sauk City, Wis.;** Frank Geier; one-story garage, 80x160.

**West Allis, Wis.;** Frank C. Krohne, 56th and Greenfield avenue; one-story garage, 20x115; $5000.

**Clarksville, Ark.;** F. L. Cox; one-story brick garage, 48x120; gravel roof; for Arrington & Love Brothers; $10,000.

**Denver, Col.;** J. W. Weeks, 753 S. Logan street; one-story garage, 22x24; for J. C. Egleston; $2000.

**Denver, Col.;** J. A. Leslie, 1647 S. Logan street; one-story garage, 16x24; for W. L. Blair; $2000.

**Denver, Col.;** Alexander Duthie, 550 S. High street; one-story garage, 50x125; for J. D. Morrissey; $8000.

**Denver, Col.;** W. J. Jamminga, 1301 S. Washington street; two-story garage, 30x90; for Denver Bread Co.; $4000.

**New Haven, Conn.;** B. Charles Dillon, 912 State street; one-story garage, 48x50; for A. Rich, 240 Putnam street; $4500.

**Washington, D. C.;** W. T. H. Rien, Evans building; 12 one-story garages, 20x11 each; for James Sharp and C. C. Calhoun, Colorado building; $3700.

**Chicago, Ill.;** J. W. Snyder, 122 S. Michigan avenue; one-story garage, 46x170; for Peoples Gas Light and Coke Co.; $10,000.

**Evanston, Ill.;** James Wigginton, 1115 Oak avenue; one-story private garage, 56x23; for Warner G. Bair, 923 Michigan avenue, Chicago; $1500.

**Highland Park, Ill.;** E. A. Smith; two-story private garage, 20x35; $3000.

**Moline, Ill.;** Brissman Co., 1412 10th street; one-story garage; $6900.

**Oak Park, Ill.;** George C. Bellick & Co., 926 Wesley avenue; one-story private garage for J. Haggard, 159 N. Elmwood avenue; $1500.

**Ft. Wayne, Ind.;** Henry Hilgeman, 528 E. Wayne street; one-story garage; $5000.

**De Witt, Ia.;** George A. Elder; one-story public garage, 62x126; for Frank Kearney; $10,000.

**Sioux City, Ia.;** O. McWilliams, 409 26th street; one-story garage, 40x130, for R. P. Brown, Security building; $8000.

**Sioux City, Ia.;** Pilchard Building Co., Frances building; one-story garage, for Alfred La Bresche and E. Brusseau, 1703 W. 15th street; $15,000.

**Manhattan, Kan.;** C. Johnson; one-story garage, 50x50; for Mid-Quinn Grocery Co.; $3000.

**Wichita, Kan.;** Dieter & Wenzel, 501 S. Main street; one-story garage, 50x149½; for Goodin Motor Co., 238 S. Market street; $900.

**Ashland, Ky.;** Ward & Ward; one-story garage, 50x143; for C. C. Magann, Cattlettsburg, Ky.; $6000.

**Louisville, Ky.;** Modern Building Co., 519 E. Broadway; one-story private garage; for Mrs. M. E. Woolridge, 1012 S. Fourth street; $2000.

**Baltimore, Md.;** P. J. Cushin, 217 St. Paul street; one-story public garage, 82x152; for J. C. Smith, care J. F. Pinger, 16 E. Lexington street; $15,000.

**Baltimore, Md.;** F. A. Lazendy, 414 Rey highway; two-story public garage, 50x150; for Milburn Brothers, Calverstone road and Edmanston avenue; $15,000.

**Fall River, Mass.;** Albert & LeClaid, 1233 S. Main street; one-story public garage, 54x124; for Joseph N. Gagnon, 216 Redman street; $6500.

**Haverhill, Mass.;** Archie Lugli, 85 Hilldale avenue; one-story public garage, 53x31; for Mrs. Lena Darinoff, 10 Green street; $400.

**Taunton, Mass.;** Joseph A. Glenn, Fall River, Mass.; one-story public garage, 49x158; for Brownell & Burt, 19 Washington street; $15,000.

**Benton Harbor, Mich.;** Fred S. Hopkins, Main and Water streets; one-story garage, 40x125; $10,000.

**Detroit, Mich.;** A. Yetts, 2290 Logan avenue; one-story public garage, 47x50; for S. Carmandy, 2217 W. Fort street; $4000.

**Highland Park, Mich.;** H. A. Barber, 224 Tyles street; one-story garage for George Brown, 30 Grand avenue; $4000.

**Keewatin, Minn.;** Charles Chalberg, Grand Rapids, Mich.; one-story garage, 28x60; for G. H. Williams; $3500.

**Joplin, Mo.;** Roy Hoffman; two-story garage, 50x120; for W. A. Swann; $12,000.

**St. Joseph, Mo.;** Lawhon-Staney Construction Co.; one-story oil filling station, 12x24; for Standard Oil Co.; $3750.

**Omaha, Neb.;** Peter Kiewitts Sons, 756 Omaha National Bank building; one-story garage, 72x132; for Mrs. M. O. Maul, 833 Park avenue; $12,000.

**Camden, N. J.;** Robert M. Wells, 719 Elm street; one-story public garage; for Charles E. Ballinger, 813 Elm street; $6000.

**Camden, N. J.;** Hensgen Brothers, 1140 Mechanic street; one-story public garage, 40x43; for Albert Scherneck, 1131 Federal street.

**Camden, N. J.;** James W. Draper, 436 Haddon avenue; one-story garage, 24x50; for Hurley Co., Broadway and Pine street; $4000.

**East Orange, N. J.;** Milton T. Burnett, 360 Halstead street; one-story garage; for James J. Airey, rear 24 N. Park street; $5000.

**Newark, N. J.;** Kolba Wrecking and Construction Co.; one-story brick garage, 50x100; at 183-85 Broome street; $7000.

**Newark, N. J.;** John Wassnier; one-story private garage, 24x28; at 472 Parker street; for James T. Clark; $2700.

**Newark, N. J.;** Morris Doinbush; one-story brick garage, 50x59; at 198 Ridgewood avenue; $5000.

**Newark, N. J.;** James T. Clark, 70 Adams street; two-story private garage, 24x29; $2500.

**Newark, N. J.;** Bonnell Motor Car Co.; one-story brick garage at 39-47 Sussex avenue; $35,000.

**Newark, N. J.;** Aaron E. and Nathan Golinken; one and two-story brick garage and shop at 90-92-94 Somerset street; $13,000.

**Newark, N. J.;** Gregorio Ceravolo; one-story brick garage at 16 Stone street; $1800.

**Brooklyn, N. Y.;** Charles Money, 52 Vanderbilt avenue, New York City; one-story garage, 16x48; for Ira S. Bushey & Son; $4000.

**Jamestown, N. D.;** W. J. Curren, Valley City, N. D.; one-story garage, 40x60; for Severn Estate; $3000.

**Akron, O.;** Edward Kurtz, 394 S. Arlington avenue; two-story garage, 12x18; for E. B. Hartline; $2000.

**Akron, O.;** T. E. McShaffery Construction Co., 172 S. Forge street; one-story garage, 47x97; for Akron Selle Co.; $12,000.

**Cincinnati, O.;** Leibold & Gott, 134 E. Fourth street; one-story private garage, 24x24; for Nicholas Hoban, 1363 Myrtle avenue; $2200.

**Cincinnati, O.;** Doepke Co., 1820 First National Bank building; one-story garage, 31x72; $10,000.

**Cincinnati, O.;** Cleaber & Hodge, 1848 Elm street, Norwood; one-story garage, 160x40; for George C. Harris, 2800 Harris avenue; $2500.

**Cincinnati, O.;** Karl Building Co., 1633 Dewey avenue; one-story private garage, 18x20; for Albert Gohnstengel, 259 Helen street; $1200.

**Cincinnati, O.;** J. A. Gieswein, Woodbine and Shehan streets; one-story private garage, 29x30; for N. Newton, 8337 Woodbine avenue; $1450.

**Cleveland, O.;** Paul Brothers, 528 Citizens building; one-story garage, 30x100; for Great Western Oil Co., 2486 E. 37th street; $3000.

**Cleveland, O.;** George Gantose, 207 Columbia building; one-story private garage, 22x40; $3000.

**Lancaster, O.;** A. F. Mowery, 1103 N. Columbus street; one-story garage and sales room, 33x85; for E. R. Defenbaugh and A. F. Mauger; $3500.

**Boynton, Okla.;** Cadd Construction Co., Muskogee, Okla.; brick and cement garage, 50x120; gravel roof; for W. T. Cole, Muskogee, Okla.; $7000.

**Harrisburg, Pa.;** Joseph Comeraining, 1918 N. Second street; one-story private garage, 90x34; for Hershey Creamery Co.; Cameron and Kittetining streets; $2500.

**Harrisburg, Pa.;** J. Peneraing, 1918 N. Second street; one-story public garage, 210x100; for Harrisburg Auto Co., care George McFarland, Hamilton and Susquehanna streets; $18,000.

**Oakmont, Pa.;** E. Oscar Loff, 800 Darby road, Llanerch, Pa.; one-story private garage and shop; for Herbert S. Hansell, Eagle and Darby roads; $5000.

**Pittsburgh, Pa.;** Andres Bonsen, S. 18th and Mary streets; one-story storage garage, 60x90; for George N. Glass, care Keystone Lumber Co.; $5000.

**Pittsburgh, Pa.;** A. Glick; one-story garage, 20x28; $2100.

**Pittsburgh, Pa.;** Central Homes Co., 61 Vandergrift building; two one-story garages, 21x42 and 21x21; for Kenneth Burley; $12,000.

**Philadelphia, Pa.;** O'Meara Construction Co.; two-story brick and reinforced concrete garage, 36x105; southeast corner Delaware avenue and Shackamaxon street; for Pennsylvania Sugar Co.; $18,000.

**Philadelphia, Pa.;** Abrasive Co.; one-story brick garage, 72.6x22.4; northeast corner James and Fraley streets; $1500.

**Philadelphia, Pa.;** Moss & Taylor; three one-story garages, each 14x21; at 1017 and 1021 North 64th street; $2700.

**Philadelphia, Pa.;** Howard Smith; two brick garages, each 11x22; at 1129 East Chelten avenue; $500.

**Philadelphia, Pa.;** E. E. Dwrell; one-story brick garage, 58x19; at 2717 Oxford street; for H. Baldwin; $2300.

**Philadelphia, Pa.;** J. G. T. Miller; one-story brick garage, 73x20; southeast corner 27th and Huntingdon streets; for Martin Kelley; $1506.

**Philadelphia, Pa.;** Stacy Reeves & Sons; one-story garage, 16x16, at 2839 Wynnewood avenue; for Frederic E. Aaron; $1500.

**Philadelphia, Pa.;** T. Compton & Brother, 2614 Oakland street; one-story garage, 25x72; for Hulton Dyeing and Finishing Co., 3827 Frankford avenue; $4000.

**Philadelphia, Pa.;** E. F. Crean & Son; one-story brick garage, 65x15; northwest corner Emerald and Arizona streets; for H. Wiedman; $1000.

**Philadelphia, Pa.;** Bushnell Brothers; one-story brick garage, 12x16; southeast corner Westmoreland and Kip streets; for Estella Douglass; $850.

**Philadelphia, Pa.;** Edward Holland; one-story garage, 16x20, at 920 S. 15th street; for Mary F. Dunton; $950.

**Philadelphia, Pa.;** John S. Walter; one-story stone garage, 17.10x20; at 6109 Oxford street; for George W. Kirchner; $1600.

**Philadelphia, Pa.;** Henry Stocks; one-story brick garage, 50x18; north side Wakeling street, east of Cottage street; $1000.

**Philadelphia, Pa.;** Henry G. Evans; two-story brick garage, 57x31; west side Delaware river, north of Westmoreland street; for Pearson & Ludascher; $5000.

**Philadelphia, Pa.;** Harry Feldman; one-story brick garage, 9x14; north side Walnut street; east of 58th street; for Saidel & Feldman; $500.

**Philadelphia, Pa.;** F. Rezzillo; one-story brick garage, 40x80; east side Almond street, north of Westmoreland street; $5000.

**Philadelphia, Pa.;** E. E. Hilbon-Back, 1809 Brandywine street; one-story garage, 25x70; for M. Lloyd & Co., 29th and Ridge avenue; $25,000.

**Philadelphia, Pa.;** John N. Gill & Co., 112 S. 16th street; one-story private garage, 26x36; for Electric Service Supplies Co.

**Philadelphia, Pa.;** Enos L. Seeds; one-story stone garage, 21x27; southwest corner Wissahickon and Cliveden avenues; $1500.

**Philadelphia, Pa.;** J. D. Fisher; one-story brick garage, 12x14; east side 59th street, south of Chestnut; for George Hansen; $600.

**Philadelphia, Pa.;** E. M. Evans; one-story brick garage, 16x16; southwest corner 31st and Wharton streets; for S. M. Allen; $500.

**Philadelphia, Pa.;** S. C. Abernethy; one-story brick garage, 80x18, with wing 18x72; southwest corner 15th and Ruscomb streets; for C. M. Stromap; $2000.

**Philadelphia, Pa.;** Robert Killough; one-story stone garage, 13x21; rear 533 Pelham road; $600.

**Philadelphia, Pa.;** I. A. Dunkelberger; one-story stone garage, 13x19; at 940 East Washington lane; for Mrs. J. Smith; $600.

**Philadelphia, Pa.;** Barndt & Son; one-story brick garage, 19x37; at 1522 West Louden street; for Simon Klein; $1425.

**Philadelphia, Pa.;** McClintock & Weaver; one-story stone garage, 20x21; at 221 West Hortter street; for R. H. Brown; $1000.

**Philadelphia, Pa.;** Alfonso Verdo; one-story brick garage, 21.10x22.10; at 6113 Oxford street; for H. C. Mallon; $950.

**Philadelphia, Pa.;** Barnes Brothers, 2080 E. Willard street; one-story garage, 40x84 and 40x120 and 72x120; for Robert Crayand, James Theburn, 373 Frankford avenue.

**Philadelphia, Pa.;** Daniel J. McNamee, 1621 N. 15th street; one-story garage. 78x104; for Peter Cavanaugh. 222 Chestnut street; $8000.

**Sewickley, Pa.;** H. E. Beall & Co.; two-story private garage, 22x28; for J. B. Booth, 216 E. Robinson street, Pittsburgh: $5500.

**Woonsocket, R. I.;** Frank Avallone, 55 Commercial building; one-story private garage, 36x57; for Patrick O'Hara, 163 Cate street; $4500.

**Woonsocket, R. I.;** J. E. Mandeville, 224 Burnside avenue; one-story public garage, 37x54; for Alphonse Parent, 830 Social street; $5500.

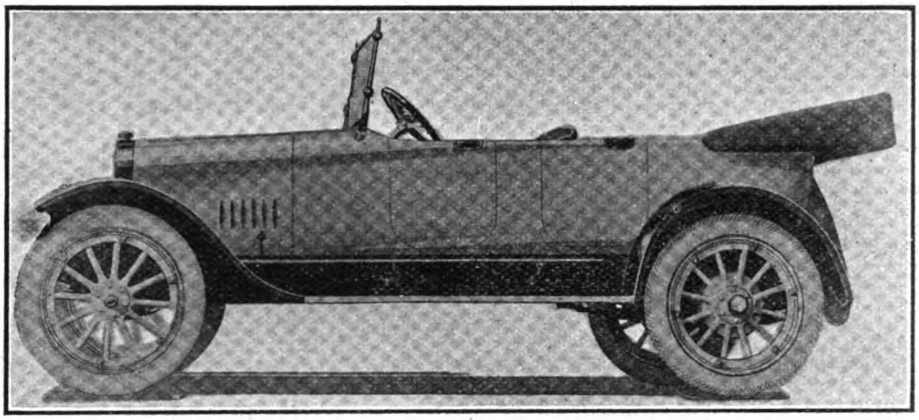
**Coleman, Tex.;** J. Powell; one-story garage, 61x120; concrete floor, metal ceiling, metal skylight: for B. Martin & Co.: $10,000.

**Houston, Tex.;** W. H. Gill and Edward S. Smith; one-story brick garage. 60x100: $8500.

**Waverly, Va.;** L. Mussman. Suffolk, Va.: two-story public garage and service station. 36x140; for Gray & Hanselman: $12,000.

**Charleston, W. Va.;** J. L. and W. A. Abbott, 12 Columbia boulevard: one-story sales room. 45x125; for R. G. Hibbard, 312 Broad street.

**Huntington, W. Va.;** Henry Persum, Ritter building: two-story private garage, 25x22: for Leon S. Wiles, 1545 Fifth street: $3000.



**Crow-Elkhart Five-Passenger Touring Car, Technically Described in the Automobile Journal, Dec. 10, 1917. An Attractive Job, Priced at $935.**

**FEATURES OF CROW-ELKHART CHASSIS.**

**Engine, four-cylinder, L head.**
**Bore and stroke, 3½x5.**
**Horsepower (S. A. E.) rating, 19.6.**
**Lubrication, splash, constant level system.**
**Cooling, thermo syphon, V shaped radiators on de luxe models.**
**Carburetor, Zenith.**
**Fuel feed, vacuum.**
**Ignition, Connecticut.**
**Starting and lighting, Dyneto two-unit.**
**Clutch, Borg & Beck multiple disc.**
**Gearset, three speed selective integral.**
**Rear axle, full floating.**
**Wheelbase, 114½ inches.**
**Tire sizes, 32x3½.**
**Prices, $935; de luxe models, $995.**

**Martinsburg, W. Va.;** S. A. Westenhafer, 625 Winchester avenue; two-story public garage, 100x110; for S. S. Pine & Son, 301 Winchester avenue; $12,000.

**Parkersburg, W. Va.;** E. M. Enright; auto building, 50x130; for Overland Sales and Service Co.; $8000.

**Depere, Wis.;** Beauregard Brothers; one-story filling station, 24x30; for Standard Oil Co. of Indiana, 72 W. Adams street, Chicago, Ill.

**Fond du Lac, Wis.;** L. F. Schroeder; one-story filling station for Standard Oil Co., Milwaukee, Wis.; $6000.

**Farrington, Wyo.;** Ideal Construction Co.; Bridgeport, Neb.; two-story garage, 100x140; for J. P. Nolan; $30,000.

# NEW BUSINESS CONCERNS AND CHANGES OF NAMES

## The Month's Record of Transfer of Ownerships and Opening of Garages, Agencies, Branches, Service Stations and Repair Shops.

### Recent Transfers of Business Ownerships.

**Carlinville, Ill.;** The Beasley building on North Broad street has been purchased by Fanning & Gerber. They will remodel it into a garage and sales agency.

**Canton, Ill.;** L. R. Snyder has sold his interest in the firm of Snyder & Ellis to Fred I. Ellis.

**Dwight, Ill.;** C. A. Robinson has bought an interest in the business of the O. H. Naffziger Motor Car Agency, and the firm will be known as Naffziger & Robinson.

**Eureka, Ill.;** Moultier Brothers have purchased the garage and sales agency formerly conducted by the Conrad Motor Co.

**Lewiston, Ill.;** The Crescent Machine Works has been leased by E. J. Weese. The building will be remodeled for a garage and sales agency.

**Auburn, Ia ;** John R. Grey has sold his garage to Robert Garnatz.

**Charter Oak, Ia.;** L. F. Lorentzen has sold his garage to Fred J. Tilden.

**Denison, Ia.;** William Gifson has purchased a half interest in Bruce Rogers' Garage.

**Dysart, Ia.;** R. P. Freet has sold his interest in the Dysart Motor Car Co. to A. C. Freet.

**Kiron, Ia.;** Charles Sjogren has sold a half interest in the Kiron Auto Co. to Leslie Larson.

**Hancock, Ia.;** Ira Greever Garage has been purchased by Samuel Shaw.

**Holdredge, Ia.;** H. J. Meisner has sold his interest in the Willard service station to George W. Kimball.

**Marshalltown, Ia.;** Charles Gallentine has sold his garage business to W. H. Smith.

**Baxter Springs, Kan.;** The Interstate Vulcanizing Co. has been purchased by Brown & Lurwick.

**Cherryvale, Kan.;** J. P. Withrow has sold his interest in the Main Street Garage to C. A. Klopfensteine.

**Cunningham, Kan.;** Harden Brothers have bought the Rayl Garage.

**Denton, Kan.;** G. E. Bechtols has sold his garage to J. H. Curtis.

**Elgin, Kan.;** The Elgin Garage has been purchased by George S. Dillon.

**Grand Rapids, Mich.;** The Erskine-Logan Garage has been taken over by Henry Hughes and Otto Gildmeister, who will operate it as a Ford service station.

**Mt. Clemens, Mich.;** The Killeward Garage has been purchased by George H. Warner.

**Quincy, Mich.;** Frank Francisco has sold his interest in the F. & L. Garage to his partner, F. E. Linsey.

**Three Rivers, Mich.;** Clyde F. Avery and F. B. Buys have formed the Buys-Avery Motor Car Co., which will be located at the Flint Avenue Garage. The company will be the distributors for the Dodge Brothers car.

**Domiphan, Mo.;** A. Malugen has sold his garage to W. R. Moore.

**La Palata, Mo.;** The Davis Motor Co. has been purchased by McCumbers & Hyatt.

**Osawatomie, Mo.;** The Osawatomie Electric Supply Co. has been purchased by Kay O. Burt. The company will continue to handle generators and batteries.

**Palmyra, Mo.;** Nix & Berghofer Hardware and Implement Co. has been purchased by Freidank & Rothweiler.

**Edinburg, N. D.;** B. H. Star and Walter Dougherty have sold their garage to Clarence Bjornebye.

**Maddock, N. D.;** Simon Hesteness has taken over the garage formerly owned by Jul Hammer.

**Toledo, O.;** Jones Brothers have leased the repair department of the Franklin Garage.

**Waterville, O.;** The Waterville Garage. formerly known as the Wittenmyer, has been taken by Hanifan & Disher.

**Weston, O.;** The Weston Garage has been purchased by the Cavendish Brothers. They have the agencies for the Ford and Dodge cars.

**Chocotah, Okla.;** W. A. McKenney is now the sole owner of the McKenney & Shields Garage.

**Pawhuska, Okla.;** J. C. Ferguson has sold his garage to Joe Ferguson and Harold Hurley will retire from business. The new firm will be the Ferguson-Hurley Motor Co.

**Pittsburgh, Pa.;** W. C. Rea and John F. Howley have formed the Commercial Motor Co. at Harvard street. The company will act as distributor of the Indiana truck.

**Whitewood, S. D.;** Fred Jay has purchased the National Garage of D. J. McDonald.

**Denton, Tex.;** The Fox Brothers' Garage has been purchased by L. Adair.

**Gonzales, Tex.;** A. H. Richter has purchased the stock of the Gonzales Motor Sales Co. and will remove his shop to the Gonzales quarters in the Newman cement building.

**Harlingen, Tex.;** F. A. Hayden & Son have purchased the Harlingen Garage.

**Campbellsport, Wis.;** C. R. Van de Zande & Son have purchased the garage and equipment of Glen S. Hill and will move their business to the Hill Garage. They are the distributors for the Buick, Olds and Chevrolet cars.

**Fennimore, Wis.;** Maso & Whitish have been dissolved. Whitish will operate a garage which will be known as the Auto Sales Garage.

**Fennimore, Wis.;** J. W. Moore has leased the Dempsey Getchel Garage.

**Redgranite, Wis.;** A. M. Gogin has sold the Redgranite Garage to Charles Byse.

**Shell Lake, Wis.;** J. W. Johnson has sold his garage and machine shop to E. H. Allen & Sons.

**Washbourn, Wis.;** E. H. Allen & Sons have bought the W. Johnson Garage.

**Windsor, Wis.;** Quitzo Brothers have purchased the garage business of Barlow & Nelson.

## Factories, Garages and Repair Shops.

**Anniston, Ala.;** J. C. Wheeler contemplates the erection of a garage.

**Phoenix, Ariz.;** Homer McCalla is opening a supply house.

**Hartford, Conn.;** A. T. Nevels will erect a new garage.

**Kokomo, Ind.;** The Haynes Automobile Co. will open a factory branch. The branch will be under the supervision of D. L. Watson.

**Waterloo, Ia.;** Standard Oil Co. is building a service station to cost $8000.

**New Orleans, La.;** Emile Porkert has opened new show rooms and machine shop at 1610 Canal street. A full line of automobile and motor boat supplies will be carried

**Boyne City, Mich.;** Heaton & Hooper Co. will build a garage on the Garland hotel site on Lake street. The company has the Buick agency.

**Elkton, Mich.;** Lance Bracknell has opened a garage and repair shop in the implement building.

**Holly, Mich.;** J. R. Inskeep has opened the Dixie Garage and will carry a full line of tires and accessories. He is the local dealer for Dodge Brothers' cars.

**Howell, Mich.;** Karl Welcker has leased a part of the former Britten Garage building, West Grant street, for a repair shop and general garage.

**Bunceton, Mo.;** Hunter & Karr are enlarging their garage.

**Chillicothe, Mo.;** Chillicothe Motor Co. will erect a new building.

**Chillicothe, Mo.;** C. H. Mast has opened an automobile repair shop.

**Elsberry, Mo.;** Robert W. Weeks has leased a garage.

**Miles City, Mont.;** The Shuey Motor Co. is erecting a $20.000 garage, the dimentions of which will be 115 by 125 feet.

**New York, N. Y.;** The Non-Column Garage Co. will erect a one-story garage building at 56-62 West 144th street.

**Cando, N. D.;** George McWilliams has started building a 60x140 foot garage to cost $8000.

**Cleveland, O.;** Caris-Franklin Co. of 1829 East 13th street, will erect a two-story building at 3620-36 Prospect avenue, S. E. It will have 12,250 square feet of floor space and will cost about $50,000 and will be used for an automobile sales room.

**Pittsburgh, Pa.;** A. W. Heller will erect a one-story garage at Centre avenue and Calliope street.

**Sioux Falls, S. D.;** The Sioux Falls Reo Co. is erecting a new garage.

**Tacoma, Wash.;** White & Alden, at 1014 South K street, has opened a service station and repair shop.

**Seattle, Wash.;** The Commercial Securities Co. is erecting a 75 by 100 foot modern garage.

**Walla Walla, Wash.;** Wood & Lane is building a $25,000 garage. Its dimensions will be 100 by 120 feet.

**Omro, Wis.;** A. J. Ihrke is established at his new garage and service station, which was built at a cost of $15,000. He has the agency for the Ford car.

**Redgranite, Wis.;** Hollis Decker will open a garage.

## New Business Locations and Removals.

**San Francisco, Cal.;** Four Wheel Drive Truck Co., 343 Golden Gate avenue, is now located at 454 Montgomery street.

**Hartford, Conn.;** Aetna Garage has moved from 1227 Main street to the new Empire Garage.

**Hartford, Conn.;** Palace Auto Service Co., 348 Trumbull street, has moved to 546 Asylum avenue.

**New Haven, Conn.;** The Elm City Tire Co. has moved from 56 College street to 180 York street. The company carries a stock of 20,000 tires of standard makes.

**Decatur, Ill.;** R. B. Shaw is now located at 336-42 East Main street.

**Chicago, Ill.;** The Malbohm Motors Sales Co. are now located at their new sales room, 2637 Michigan avenue.

**Rockford, Ill.;** C. B. Williamson's Garage and the sales agency has been removed from 120 North Court street to a new plant at 116-118 North Court street.

**New Hampton, Ia.;** Leicheman Motor Co. is now located at New Rockford, N. D.

**Dexter, Me.;** Howard Garage, 2245 Grove street, has moved to 2 Carver street, Cambridge, Mass.

**Belfast, Me.;** International Garage and Equipment Co. has moved to 210 Harlow street, Bangor, Me.

**Honghton, Mich.;** Harry T. King and John T. Bryant have formed the Public Garage Co., which will be located at 410 Seventh street. They will establish a modern garage and service station, repair plant and storage rooms.

**Marquette, Mich.;** City Garage, Studebaker, Paige and Dort dealer, has moved from Lincoln street to the Neely block on Iron street. The firm is managed by Klinglund & Blook.

**Muskegon, Mich.;** The Electric Service Co., Inc., formerly at 16-18 E. Clay avenue, is now in its new quarters at Clay avenue and Seventh street.

**Joplin, Mo.;** McAntire Motor Co. is now located at 217 West Fifth street. The building will be remodeled and a new concrete floor installed through the entire structure.

**Lee Summit, Mo.;** M. J. White has moved from Ritter's Garage to the new Cave Garage, and added a modern machine shop with lathes, drill press, emery wheels and will install electric power.

**Syracuse, N. Y.;** Lefever Arms Co., 2 Maltbee street, has moved to Ithaca, N. Y.

**Cleveland, O.;** Simmons-Chalmers Co. is now located at 1917 East 65th street, where modern sales and service facilities have been installed.

**Portland, Ore.;** W. H. Wallingford has moved into the four-story building. It contains a sales room, garage, paint shop and enameling rooms and covers a floor space of 40,000 square feet. He has the Ford agency.

**Providence, R. I.;** Hupmobile Service Station, 306 Broad street, is now located at 1117 Turks Head building.

**Wausau, Wis.;** Lamson Truck and Tractor Co. has moved to 4644 W. Madison avenue, Chicago, Ill.

## Agencies, Dealers and Service Stations.

**Hartford, Conn.;** Harry Starkie will specialize in giving service on Chevrolet cars.

**Aledo, Ill.;** Cornelius Swartout has opened a new supply store. A sales agency and repair and storage department will be established.

**Virginia, Ill.;** A. C. Winkle and Roy Stallings have opened an automobile sales room in the East Side Garage building. The firm will handle the Cadillac, Studebaker and Dodge Brothers' cars.

**Auburn, Ind.;** The DeKalb Sales and Service Co., on North Main street, has opened for business. The company has the agency for the Ford car and will also do all kinds of storage and repair work.

**Fort Wayne, Ind.;** Langley Motor Supplies Co. has opened for business with tires, accessories, gasoline and oil departments of the Fort Wayne Overland Co.

**Kokomo, Ind.;** The St. Aubin Tire Repair Co., 1016 St. Aubin street, has opened for business.

**Davenport, Ia.;** Horst & Strieter Co., local Ford agent, has opened a sales and service building on 420 West Third street.

**Clay Centre, Kan.;** J. L. C. Woods has opened an accessory and tire repair shop.

**Olathe, Kan.;** Charles Keepers is opening a new automobile filling station in the Weaver building.

**Jamaica Plain, Mass.;** Hoyt's Garage and Carburetor Co., 3380 Washington street, has been appointed to distribute Prest-O-Lite storage batteries.

**Joplin, Mo.;** Economy Tire Co. has opened a sales room on East Fourth street.

**Cambridge, Mass.;** The Prospect Storage Battery Service Co. has been appointed Prest-O-Lite storage battery service station.

**Battle Creek, Mich.;** The Republic Truck Co. has opened a new branch in the Post Tavern Garage building on Jackson street. A. J. Conklin is the local representative of the company.

**Newark, N. J.;** The Kent Sales Co., agent for the King Eight, will be known as the Kent Motors, Inc., with headquarters at 232 Halsey street.

**Manchester, N. H.;** The Queen City Motor Shop, which is located at 50 Granite street, has been appointed by the Prest-O-Lite, Inc., to distribute acetylene gas.

**Glen Cove, N. Y.;** The Seaman Motor Car Co. has been appointed distributor of Prest-O-Lite storage batteries.

**New York, N. Y.;** The Colonial Motors, Inc., has opened a new service station at 239-241 West 56th street, which will be managed by Lee W. Beck. The company will specialize on service for Liberty cars.

**New York, N. Y.;** The Detroit-Cadillac Motor Co. has leased the three-story building which is being erected on the east side of Broadway.

**Valley City, N. D.;** The Shannon Battery Co., on Front street, is the new Willard service station.

**Providence, R. I.;** B. A. Swenson, 522 Broad street, has added the Prest-O-Lite storage batteries to its line and will give service on them.

**Goldendale, Wash.;** C. R. Ralston, Main street, has added the Willard storage batteries to his line.

**Barron, Wis.;** F. E. Lentz is having the store front fixed up for office rooms and will continue to sell the Studebaker and Seneca cars.

**Seattle, Wash.;** James A. Smith has opened a Gates tire agency at 514 Olive street.

**Tacoma, Wash.;** The D. & M. Tire Agency has opened a sales room at 750 Broadway with a full line of Mohawk tires. E. M. Rusk is manager.

**Seattle, Wash.;** The Willard Storage Battery Co. has opened a station at 1524 11th avenue, succeeding the Auto Electric Equipment Co., with C. H. Starr as manager.

ACCESSORIES
AND
EQUIPMENT

### CYLINDER TAP AND DRILL SET.

For maximum efficiency and satisfaction it is necessary that all of the Ford cylinder head screws are in place or the head will be apt to work loose and allow both gas and water leakage. Sometimes in removing these screws, which frequently rust into place, the body is broken near the block and the removal of the piece in the block is a difficult matter.

The No. 100 cylinder tap and drill set is designed to minimize trouble in removing broken pieces, and consists of a drill, a tap and a bushing, which fits the hole in the cylinder head. To use the set the bushing is put into place in the head and, with this as a centre the broken part of the screw is drilled. The drill is of such a size that all of the screw body except the threads is removed and the balance is removed with the tap, leaving a tapped hole taking a screw the same size as originally.

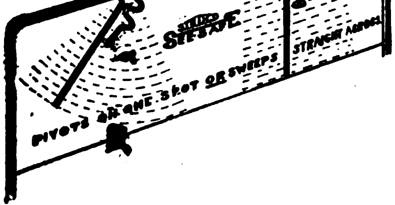
**Manufactured by Stevens & Co., 375 Broadway, New York. Price, $1.**

### AUTO SIGNAL LAMP.

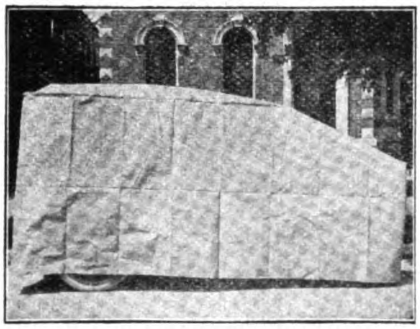
A combination tail light and signal is illustrated that should be of interest to every automobile owner. It consists of a sheet iron box which is fitted with an electric bulb and a shutter. With the shutter closed a red light is visible from the rear. When the shutter is opened the letters STOP appear, white on a red background.

The shutter is operated by a rod, which is attached to the service brake pedal, thus relieving the operator from all worry. When the brake pedal is operated the shutter is opened.

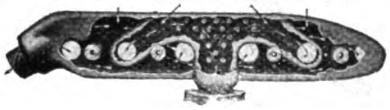
**Manufactured by Banner Accessory Manufacturing Co., 1314 South Seventh St., St. Louis, Mo. Retail price, $4.**


SEE-SAFE
PIVOTS AT ONE SPOT OR SWEEPS STRAIGHT ACROSS

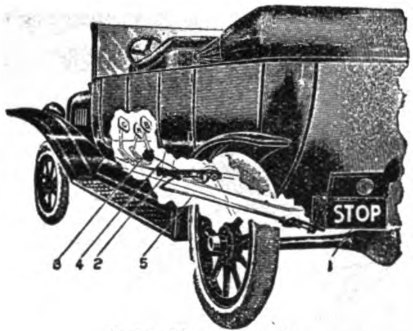
See-Safe Windshield Wiper.



Kennedy Auto Cover.



Hot Pin Manifold.



Auto Signal Lamp.

### BLOOD'S NON-FREEZE LIQUID.

With the arrival of winter comes the attendant danger of the freezing of the cooling liquid in the radiator and engine jackets. If the car is used during the winter a non-freezing solution is essential. The Blood's non-freeze liquid is used without water and has a freezing point at 58 degrees below zero Fahrenheit. The manufacturers claim that this liquid is superior to alcohol because of the fact that while alcohol solutions boil away and lose their strength under ordinary engine temperatures, this solution boils at 374 degrees Fahrenheit, far above that of water, which is but 212.

It is claimed that this solution has no action on metals, cloth or rubber; that it contains no calcium chloride or other inorganic salts, and that after the radiator is once filled no further attention is necessary.

**Manufactured by T. L. Blood & Co., St. Paul, Minn. Price $1.50 per gallon. Special proposition to dealers.**

### KENNEDY AUTO COVERS.

Such cars as are to be stored this winter and left unused until spring, if unprotected, will collect dirt and dust, which, sooner or later, will penetrate the finish and impair the bright appearance of the body.

The Kennedy Auto Covers are made in a number of sizes of heavy durable paper, securely reinforced to prevent tearing and prevent the entrance of dust, dirt and, to a certain extent, moisture and light. They completely cover the car and make a private storage space in a public garage.

**Manufactured by the Kennedy Car Liner and Bag Co., Shelbyville, Ind. Write for prices.**

### SEE-SAFE WINDSHIELD WIPER.

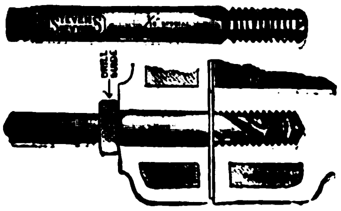
An extremely low priced windshield wiper and cleaner is introduced under the name of "See-Safe." This device is so arranged that it may be drawn across the windshield, cleaning a rectangular space, or pivoted upon the top and swung in a half circle.

Every driver who has driven in a rain or snow storm and been forced to put his head out past the windshield in order to see the road ahead, realizes the value of a device for keeping the windshield clear.

**Manufactured by Stadeker Metal Specialty Co., 19 S. Fifth Ave., Chicago, Ill.**

### HOT PIN MANIFOLD.

The difference between wet and dry mixtures in the carbureting system is noticeable from their effects upon engine efficiency. Wet mixtures burn slowly, give less power, carbonize quickly and dilute the lubricant. The more thoroughly mixtures are heated the more finely they are vaporized, so that the evident solution to the fuel problem is the application of heat.



Cylinder Tap and Drill Set.

The Hot Pin Manifold, designed for Ford cars, consists of a double manifold or one manifold (the intake) cast inside of the other (the exhaust). With this arrangement all exhaust gases must pass over the surface of the intake manifold, heating the gas and reducing it to a dry vapor.

Inside the intake manifold are cast a number of pins, which absorb heat from the exhaust gases and transfer it to the incoming mixture, which passes around the pins on its way to the engine.

The whole device is installed in place of the two manifolds on the car, and may be installed even easier than the stock manifolds.

**Manufactured by K. B. C. Co., 2015-A Michigan Ave., Chicago, Ill. Price, $15.**

## TOLEDO AIR COMPRESSOR.

An air compressor which is said to contain a number of interesting features in design is herewith illustrated. This compressor has two compressing strokes and its action is as follows: As the piston travels to the top of the stroke a charge of air is drawn into the base of the machine. This charge is compressed at the downward stroke of the piston and forced into the cylinder, where it is again compressed at the up stroke and forced into the tank.

The cylinder has a three-inch bore and the piston a three-inch stroke and at 208 revolutions per minute fills a 12x60 inch tank to 80 pounds pressure in three minutes and to 160 pounds in 11 minutes. The cylinder is cast with cooling fins and air circulation is maintained by cooling fan on the flywheel. The pistons are long and carry five rings. The bearings are of bronze and the entire machine is heavily constructed.

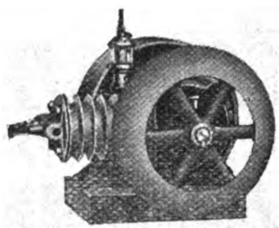
In addition to the size above described, the manufacturers are building a compressor having a 3¼ inch bore and a 4½ inch stroke. Operating at 200 revolutions per minute this size fills a tank 24x60 inches to 205 pounds per square inch in 30 minutes.

**Manufactured by Toledo Gas Engine Works, Toledo, O. Write for prices.**

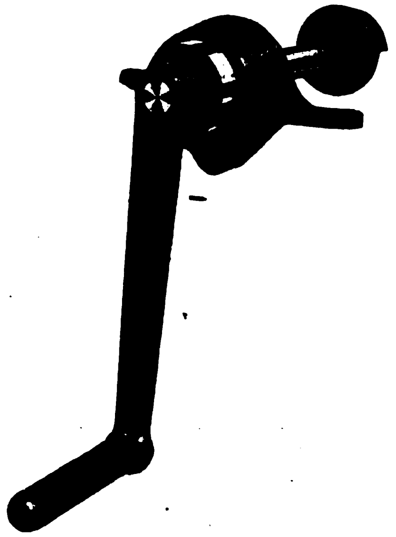
## PUSH CLEAN SPARK PLUG.

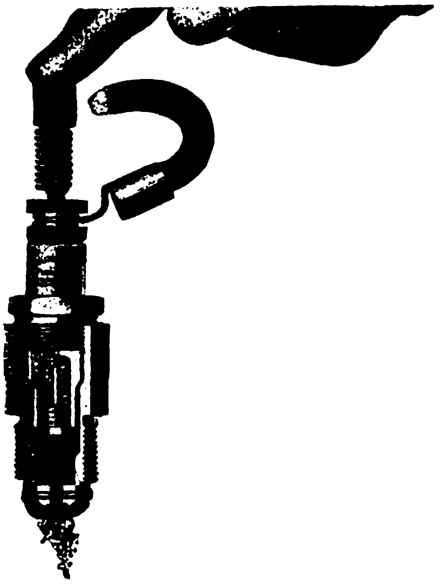
It is an undisputed fact that the functioning of a gasoline engine is entirely dependent upon the action of the spark plug. If this useful device is broken, short circuited, or covered with carbon and oil, it makes no difference how well the rest of the machine is working, the engine will not give results.

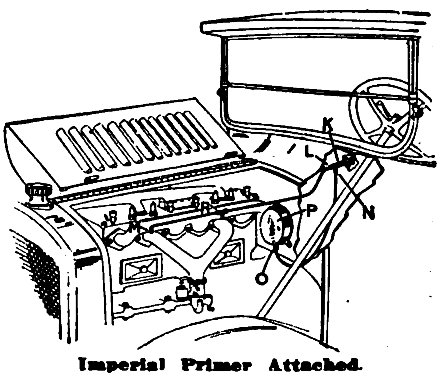
The Push Clean Spark Plug is an innovation in spark plug design. It is both new and unique, and claimed to be 100 per cent. efficient. This device consists of the conventional base, porcelain and centre electrodes. The feature is the movable centre electrode, which is so constructed that by pressure upon the insulated top it may be pressed down, scraping away the carbon from the inside of the porcelain, as well as from the spark gap.


Toledo Air Compressor.

Three Square Scraper.


Carson Kickless Crank.


Push Clean Spark Plug.



Imperial Primer Attached.

Two seconds time will suffice to clean all four plugs, as there is no necessity for their removal from the engine. The illustration gives a clear idea of the construction.

**Manufactured by Wellman-Howe Manufacturing Co., 21 E. Van Buren St., Chicago, Ill. Price $2.**

## IMPERIAL PRIMER.

A device which is claimed by the manufacturers to do away with all starting troubles due to excessive and low temperatures, is known to the trade as the Imperial primer. This device is designed for practically any car and consists of an auxiliary or priming tank S, in which is carried a supply of high test gasoline, a priming pump K, which is connected with the manifold at one or more points.

One stroke of the pump plunger is said to force a finely atomized spray of fuel into the manifold, which furnishes the necessary vapor for the first two or three explosions; after which the engine is warmed enough to vaporize the fuel from the carburetor.

All tube connections are made by means of compression couplings, so that soldering, flaring, etc., are eliminated. The only change required in the engine is the boring and tapping of the ⅛ inch holes in the manifold.

Though the best results are obtained when high test gasoline is used in the priming tank, low test gasoline may be used with satisfactory results.

**Manufactured by the Imperial Brass Manufacturing Co., 517 S. Racine Ave., Chicago, Ill. Price complete, $6.**

## THREE SQUARE SCRAPER.

One of the tools that is indispensable in a repair shop is the bearing scraper. While different mechanics have their own ideas of the shape of the tool, the three square scraper illustrated is radically different from the ordinary type of curved scraper and will be found a very convenient tool for ordinary work.

It is made from the best of steel, carefully hardened and ground hollow on its three sides and fitted with a stained and polished maple handle.

**Manufactured by Stevens & Co., 375 Broadway, N. Y. Write for prices.**

## CARSON KICKLESS CRANK.

The Carson kickless crank is a device to eliminate the danger from back firing when cranking an automobile engine. This device is sold under a forfeit of $100, which may be collected from the manufacturers in case a person using the device is injured by the kick of the crank handle. The mechanism of the device is quite simple and it is claimed that there is practically nothing to break or get out of order. It can be attached by the most inexperienced motorist in a few minutes.

**Manufactured by Carson Manufacturing Co. of Richmond, Va. Price, $7.50.**

## THE LYDON SPEEDLER.

In these times of war the conservation of gasoline is as paramount as the conservation of food, for gasoline is the food of the ambulance, aeroplane, tank and truck. The Lydon Speedler is an automobile accessory, the prime object of which is the saving of gasoline.

This device is attached just above the carburetor and projects into the manifold. In action it is controlled by a lever on the steering post, just below the wheel, which admits more or less cold air into the manifold. It also serves as an air brake when opened wide with switch turned off, as it then fills the cylinders with cold air, thereby giving extra compression.

It also serves as a decarbonizer by drawing kerosene or other decarbonizing mixtures through intake manifold into cylinders while engine is running.

It is sold on an absolute money back guarantee and may be applied in a short time by any garage man.

**Distributed by M. L. Worcester, Winthrop, Mass. Price, $5.**

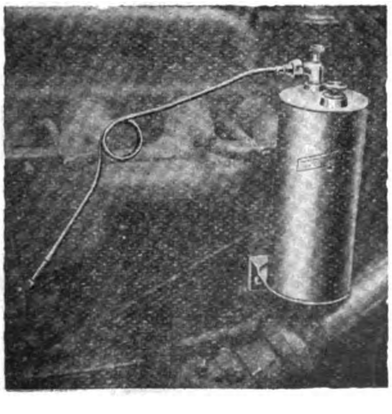
## NOBLE SAFETY BRAKE.

Until a driver has been on the verge of an accident he does not know just how quickly his brain can act and how soon he can get control of his car. As a general rule an excited driver will grab for his emergency brake and if the brake is efficient he may avert an accident.

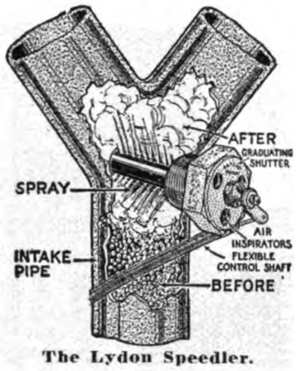
For the purpose of adding to the efficiency of the emergency brake of the Ford car, the Noble Safety Brake device has been manufactured. This device is so arranged that upon application of the emergency the service brake is automatically applied. The driver's attention need not be divided between the service and emergency brakes, but concentrated on the emergency lever at all times.

The manufacturers of this device claim that the braking action where equally distributed between the wheels and transmission is smooth and easy and that maximum braking efficiency is attained.

**Manufactured by Hughes Manufacturing Co., 1806 South Michigan Ave., Chicago, Ill. Price, $2.25.**

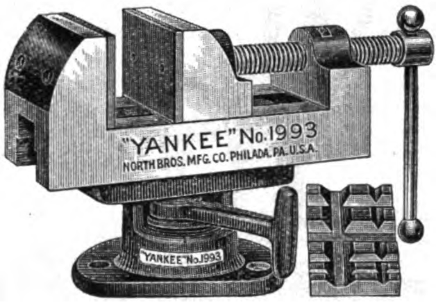


Whitney Gas Humidifier.



The Lydon Speedler.

Noble Safety Brake.


"YANKEE" No. 1993
NORTH BROS. MFG. CO. PHILADA. PA. U.S.A.
YANKEE No. 1993

## YANKEE VISE.

Every repair man or owner of a small garage doing his own repair work knows a bench vise is as essential as a hammer or wrench. A vise that should be of interest because of its varied uses, is known as the Yankee No. 1993.

This device consists of a cast iron body fitted with a sliding jaw, also of cast iron, which is carried back and forth by a ⅝ inch steel screw. Both jaws are fitted with steel faces and the sliding jaw extends through a slot one inch wide in the body of the vise.

The device is mounted on a swivel base and may be removed for use on a drill press, shaper, or with other machine tools. It may be used for various kinds of work on the automobile. The space between the jaws when fully open is 3⅛ inches.

With the vise is furnished a steel plate which has a number of V grooves for holding round or irregular shaped pieces.

**Manufactured by North Bros. Mfg. Co., Philadelphia, Pa. Write for price and catalogue.**

## MOSCO CATALOGUE.

A new 1918 edition of the Mosco Catalogue is now ready for distribution to both the trade and car owners. The Mosco line, consisting of various devices for the Ford car, is very interesting and should be investigated by every person interested in Ford cars.

This line of goods consists of several types of timers, wheel pullers for various cars, valve grinders, auto locks, bow clamps and other Ford devices.

**Write for catalogue to Motor Specialties Co., Waltham, Mass. Special dealers' proposition.**

## THE WHITNEY GAS HUMIDIFIER.

A device designed to act as a carbon eliminator and to prevent its formation has just been put on the market under the name of Whitney Gas Humidifier.

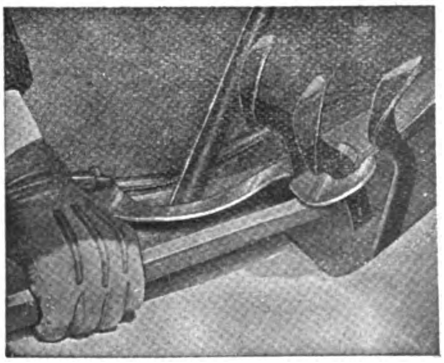
But one connection is made, and that is with the intake manifold, the humidifier is then filled with water and the engine started. The humidifier adjusting valve is next opened and the engine speeded up to several hundred revolutions per minute, drawing in water through the manifold, and driving out the carbon, which is softened by the action of the water vapor.

After the carbon has been removed from the engine the adjusting valve is turned so as to allow but a small part of the water to enter the manifold. It is said that with the valve thus adjusted one filling of the tank will last for several hundred miles. As soon as the tank becomes emptied a valve automatically closes, preventing the entrance of air into the manifold.

**Manufactured by the R. S. Whitney Manufacturing Co., 74 Nichols St., Lewiston, Me. Prices, size No. 1, $7.50; No. 2, $9.50.**

## ESSANSEE LOCK.

A simple little device designed to make the locking of a Ford car a practical matter is illustrated herewith, and called the Essansee Lock. This device consists of an S shaped steel fitting, which is placed around the high speed clutch pedal and against the reverse pedal, holding the reverse and high gears in and making the removal of the car practically impossible. The device is



Essansee Lock for the Ford Car.

locked into place back of the emergency brake lever.

It is said that the device is as strongly made as are the pedals, so that even if a crow bar were used to pry the device from its place the pedals would be broken before the device itself.

**Manufactured by Essansee Lock Co., Land Title Bldg., Philadelphia, Pa. Write for prices.**

### SLY TIRE HOLDER.

Second perhaps only to the number of cars stolen are the number of tires taken from machines without the owner's consent. A tire strapped on the running board offers an easy mark for the thief, who has only to unbuckle one or two straps and run away with a tire that can be converted into cash very easily.

To prevent theft, as well as to offer a handy carrier for tires, the Sly Interchangeable Tire Holder has been designed for both Ford and Chevrolet tires. This device resembles a quick detachable rim and is bolted to the rear of the car. When the tire is in place an expanding device is turned, locking the tire upon the rim or holder. A padlock prevents the loosening of the expansion nut and prevents removal by an unauthorized person. On the holder are provided places for a number plate and a tail lamp.

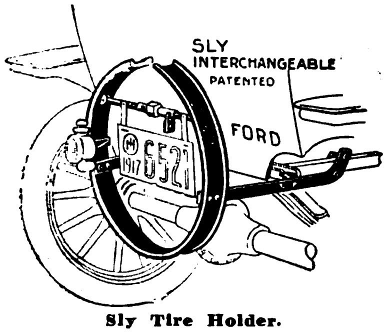
**Manufactured by New Era Spring and Specialty Co., 1177 Hamilton Ave., Grand Rapids, Mich. Write for prices. Special terms to jobbers.**

### SINGER AUTO TRAFFIC SIGNAL.

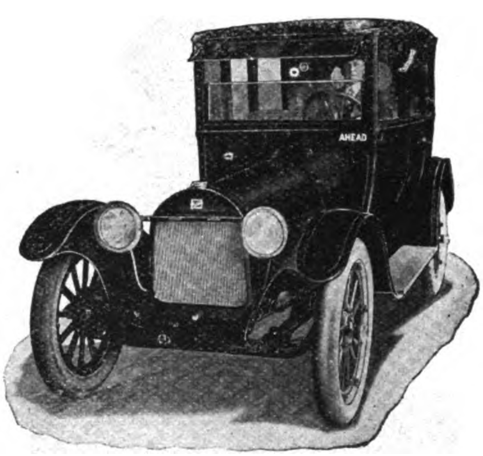
It is an interesting study to note the various signals adopted by automobilists in congested traffic conditions. No two methods seem to be alike. A hand thrust forth from the driver's side may denote, stop, turn to the left or turn to the right. Doubtless many accidents would be averted if a universal signaling system were adopted.

The Singer Auto Traffic Signal, which is now being manufactured, is designed to prevent traffic confusion and provide a suitable signal which is positive in action and easily interpreted.

This device consists of two electrically lighted boxes, one at the front of the car, the other at the rear, in which are carried five signs, Ahead, Right, Left, Stop and Back. These signs are controlled by a circular switchboard located on the steering column directly beneath the wheel.



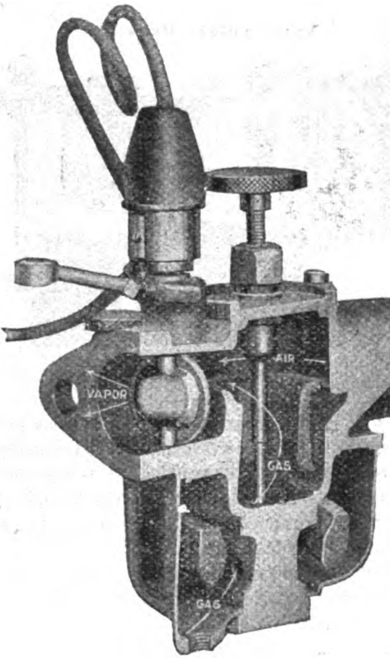
Sly Tire Holder.



Application of Singer Traffic Signal.

When the driver of the car wishes to stop he simply presses the stop button and the signal Stop appears in both boxes. This same signal is automatically displayed upon application of the service brake. The other signals are operated in like manner and as all of the buttons are interlocking, but one signal can be displayed at one time.

**Manufactured by Singer Auto Traffic Signal Co., 2827 Locust St., St. Louis, Mo. Write for prices and descriptive literature.**



Electrically Heated Throttle Valve.

### TWO NEW HOWE SPOTLIGHTS.

Two popular priced spotlight models, embodying the famous patented Howe principles, have been added to the Howe line. The No. 5 models of the double shell type, torpedo shaped, with baked on enamel finish. It is fitted with a four-inch rear view mirror, an on-and-off switch in the handle, and the patented spring controlled Howe bracket, which permits instant turning at practically any angle, the spring holding the lamp firmly in any position. With this type, as with all models, clamps are furnished in seven styles to fit each and every windshield frame.

The light measures six inches across the face and with this exception is practically the same type as the old model nine.

The Howe Junior No. 15 is a single shell spotlight of very sturdy construction. It is fitted with a convex lens, four-inch rear view mirror, an on-and-off connector switch and the standard spring bracket. It is finished in baked on enamel and is very attractive in design.

**Manufactured by the Howe Manufacturing Co., 1732 S. Michigan Ave., Chicago., Ill. Price for No. 5, $5.50; Howe Junior No. 15, $4.**

### ELECTRICALLY HEATED VALVE.

The proper application of heat to the gasoline as it leaves the carburetor is said by engineers to be the easier solution of the hard starting problem, which is greater at the present time than ever before on account of the low grade fuel.

The Electrically Heated Throttle Valve is designed to heat the mixture of gasoline and air as it leaves the carburetor. As it passes from the carburetor into the manifold it comes in contact with the throttle valve, which is electrically heated, the current being controlled by a resistance coil. For starting, from four to six amperes may be used, and as the engine is warmed the current may be cut to from two to three amperes.

This device may be used on practically any car and run on either storage battery or dry cells.

**Manufactured by Jones Electric Machine Works, 1319 Fletcher Savings and Trust Bldg., Indianapolis, Ind. Price $3.75 for Fords. Give name and model of carburetor when ordering for other makes.**

Howe Junior Spotlight No. 15 and Howe Spotlight No. 5.

### THE BURKE CONDENSER.

Every automobile owner who has used alcohol in the radiating system to prevent the freezing of the water in the winter knows that the alcohol must be replaced frequently or the solution will be weakened by evaporation.

With the engine temperature at normal this evaporation is reduced to a minimum, but as the circulation commences and the liquid is heated, evaporation commences and the alcohol is quickly dissipated through the vent tube.

To prevent this dissipation the Burke condenser may be attached to the radiator filler cap and the vent tube closed. When this is done all vapor must pass into the condenser.

This condenser is made upon the same principle that the old "Moon Stills" were and consists of a coil of tube which is cooled by the action of the air through which the automobile is passing.

As the cooling liquid is heated the alcohol evaporates and rises to the condenser, where it is cooled and condensed in the coils, dropping back into the cooling system again.

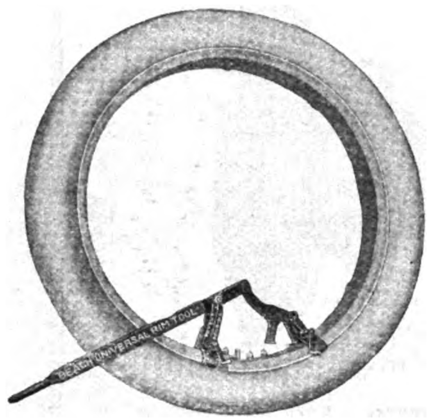
**Manufactured by Automobile Devices Co., 1619-1621 Sanson St., Philadelphia, Pa. Standard Model, $10; Little Giant, $5.**

### NATIONAL TELESCOPE PUMP.

Proper tire inflation pays big dividends and, conversely, poor tire inflation means big expenses. The average car owner pays but little attention to his tires so long as there is air in them, since the labor involved in using the hand pump is so great.

To make tire pumping easy and to utilize the power of the engine for the purpose, the National telescope pump has been designed. This device is fitted with a steel piston which is constructed with rings, similar to an engine piston, and so designed that only fresh air is forced into the tire. It is screwed into the spark plug hole or into the priming cup hole, where it may be left permanently when a shut off is used. With the device is furnished a woven cover air hose 12 feet long, a dial pressure gauge and fittings. The shut off comes extra.

**Manufactured by the National Motor Supply Co., Painesville, O. Price $9. Shut off valve $1.25.**



### BEACH UNIVERSAL RIM TOOL.

The Beach Universal Rim Tool is a device designed to eliminate all of the hard work encountered in removing tires from split rims. Every autoist who has been obliged to remove and attach a tire to a split rim realizes that the work requires considerable effort. The tire must be stretched and the rim locked.

The device consists of two clamps, which are actuated by a long lever. For removing the tire the clamps are put into place and the lever pressed downward. This action releases the rim by spreading it one-quarter of an inch, raising it over the other edge two inches and carrying it by four inches, thereby contracting the rim sufficiently so that the tire can be easily removed.

The device is left in this position until the new tire is applied, when the action is reversed. It actually contracts and holds the rim, then expands and locks it in its true position in one operation without removing or changing the position of the clamps.

**Manufactured by the Greb Co., 175 State St., Boston, Mass. Price, $7.50. Liberal discount to jobbers, dealers and garages.**

### A C CARBON PROOF SPARK PLUG.

The manufacturers of the well known A C spark plugs have placed on the market a new type known as the A C Carbon Proof, of which a sectional view is reproduced herewith. This plug was designed primarily to overcome the carbonizing trouble experienced in a certain tractor engine using kerosene as a fuel.

The results were so satisfactory that it was decided to put the plug on the market for use in automobile engines. It is made in sizes for the Ford, Overland and Studebaker cars, and in tests on Ford cars covering a period of one year the manufacturers claim that no instance has been found where a plug was removed on account of carbonizing. The porcelain is provided with a number of ribs, having saw tooth edges, which attain a sufficiently high degree of heat to burn away the carbon, thereby keeping the edges free from deposits and eliminating any chances of possible short circuit.

**Manufactured by the Champion Ignition Co., Flint, Mich. Write for prices.**

### KEYLESS AUTO CLOCK.

What to give "him" for a holiday remembrance is always a puzzling problem, but if he owns an automobile there are many little devices which will please him to own.

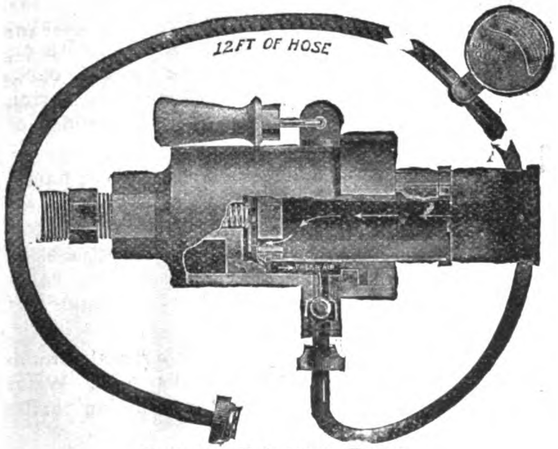
Davis, the Hardware Man, corner of Portland and Sudbury streets, Boston, Mass., makes an attractive offer this Christmas season of a special form of automobile eight-day clock which should be very acceptable to the motorist who takes pride in the appearance of the car. This clock, which costs $9.50, is of the flush type and mounts on the dash or instrument board and is both wound and set through the rim, rather than by the conventional key method.

### TRANSMISSION LININGS.

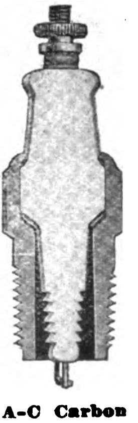
Everyone who observes the action of a Ford car in stopping often notices that the slowing down is accompanied by a severe shaking or intermittent braking action. This is due to the fact that the brake band has a tendency to catch or grab.

To eliminate grabbing and catching the advance cork insert brake lining has been made. This lining consists of a heavy fabric in which are inserted a number of cork buttons. The action of a brake lined with this fabric is said to be exceptionally smooth. This fabric is sold in sets for lining the three bands of the Ford transmission.

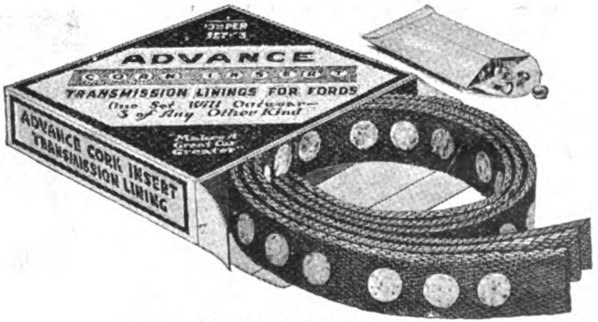
**Manufactured by Advance Automobile Accessories Corporation, Dept. K 3-1, 56 E. Randolph St., Chicago, Ill. $1 a set of three.**



National Telescope Pump.



A-C Carbon Proof Spark Plug.


ADVANCE
CORK INSERT
TRANSMISSION LININGS FOR FORDS
One Set Will Outwear—
3 of Any Other Kind
ADVANCE CORK INSERT TRANSMISSION LINING

Set of Transmission Linings.

## ROCK-A-BYE AUTO SEAT.

A unique contrivance, known as the Rock-A-Bye Auto Seat, is being marketed, which is designed to increase the comfort of the "smallest passenger" in the automobile.

This device consists of a brown washable duck basket, mounted on an enameled steel frame, the basket containing two holes through which the baby's legs protrude.

Two small steel cleats, three inches long, are furnished with the outfit, which can be permanently attached in a few minutes on any automobile to the back of the front seat, in which the hooks of the seat are engaged and sustained. All of the parts that come in contact with the polished surface of the seat are protected with soft rubber bumpers to prevent the marring of the surface.

The device is easily and quickly attached or detached, and when not in use folds up and fits under the seat. It is said to be absolutely safe and is strongly constructed.

**Manufactured by the Perfection Manufacturing Co., 2700 N. Leffingwell Ave., St. Louis, Mo. Write for catalogue and prices.**

## EVER-RIGHT GASOLINE GAUGE.

The Ever-Right Gasoline Gauge for Ford cars is a device designed for indicating the amount of gasoline in the tank at all times, and obviates the necessity of using a dirty stick or ruler. It is so arranged that the cork bobber and indicator rod is held flush with the top of the tank by a swivel catch. When it is desired to find the gasoline height the swivel catch is moved to one side, allowing the indicator rod to slip up through the cap. Notches in the rod indicate the amount of gasoline in the tank.

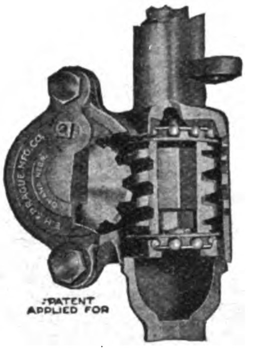
**Manufactured by Ever-Right Products Corp., Broadway, at 57th St., New York. Price $1.**

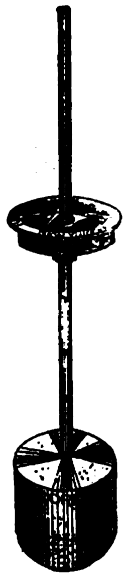
## CAR-BON-ALE.

The average car owner does not realize that less than one-third of the actual value of heat units in gasoline are really utilized for power. A large percentage of power is wasted in the exhaust and cooling system, while another percentage is wasted because of poor carburetion. This latter waste is due to the high vaporizing point and raw fuel is blown out of the exhaust in many cases.

Car-Bon-Ale is a combination of volatile oils, compressed into the form of tablets. These tablets when dissolved in gasoline are said to make it more volatile, consequently increasing the car mileage to quite an appreciable extent. The manufacturers say that one box of 100 tablets will treat 100 gallons of gasoline, and when treated it is guaranteed to equal 125 gallons of gasoline in car mileage.

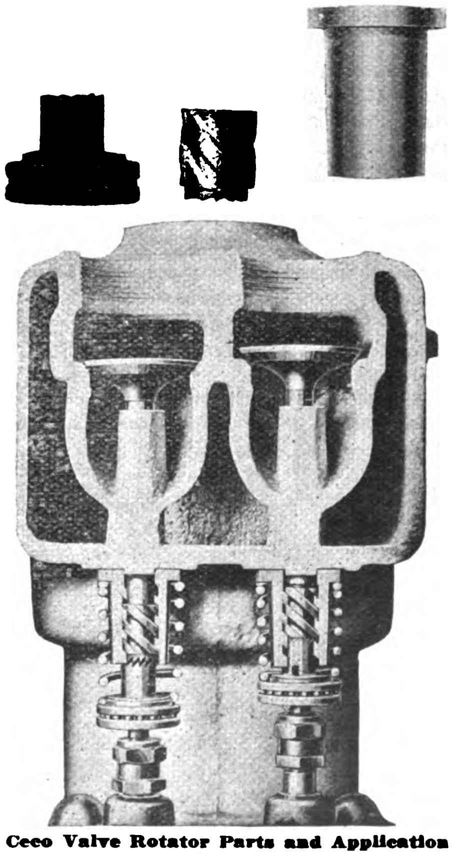
**Manufactured by the Car-Bon-Ale Sales Co., Indianapolis, Ind. Write for prices.**





Above, Ford Worm Steering Gear; at Right, Ever-Right Gasoline Gauge.

Rock-A-Bye Auto Seat.



Ceco Valve Rotator Parts and Application of Same.

## FORD WORM STEERING GEAR.

Many accidents are caused by failure of the steering gear, or because of the fact that the front wheels do not respond to the action of the steering wheel. For this reason many high class automobiles are fitted with irreversible worm steering gears, a type of steering gear which has been favorably received by engineers. The Ford car is not fitted with this type, however, and to satisfy those desiring a worm and wheel type the Sprague Irreversible Worm Steering Gear has been put on the market.

This device, similar in construction to the standard types, is so designed that it may be applied to Ford cars with but little change in the car itself beyond the removal of the old brace at the lower end of the steering column.

The Sprague gear is bolted to the engine and strongly made. Ample latitude for adjustment is allowed and the manufacturers claim to return the purchase money in case of dissatisfaction.

**Manufactured by E. H. Sprague Manufacturing Co., Omaha, Neb. Write for price.**

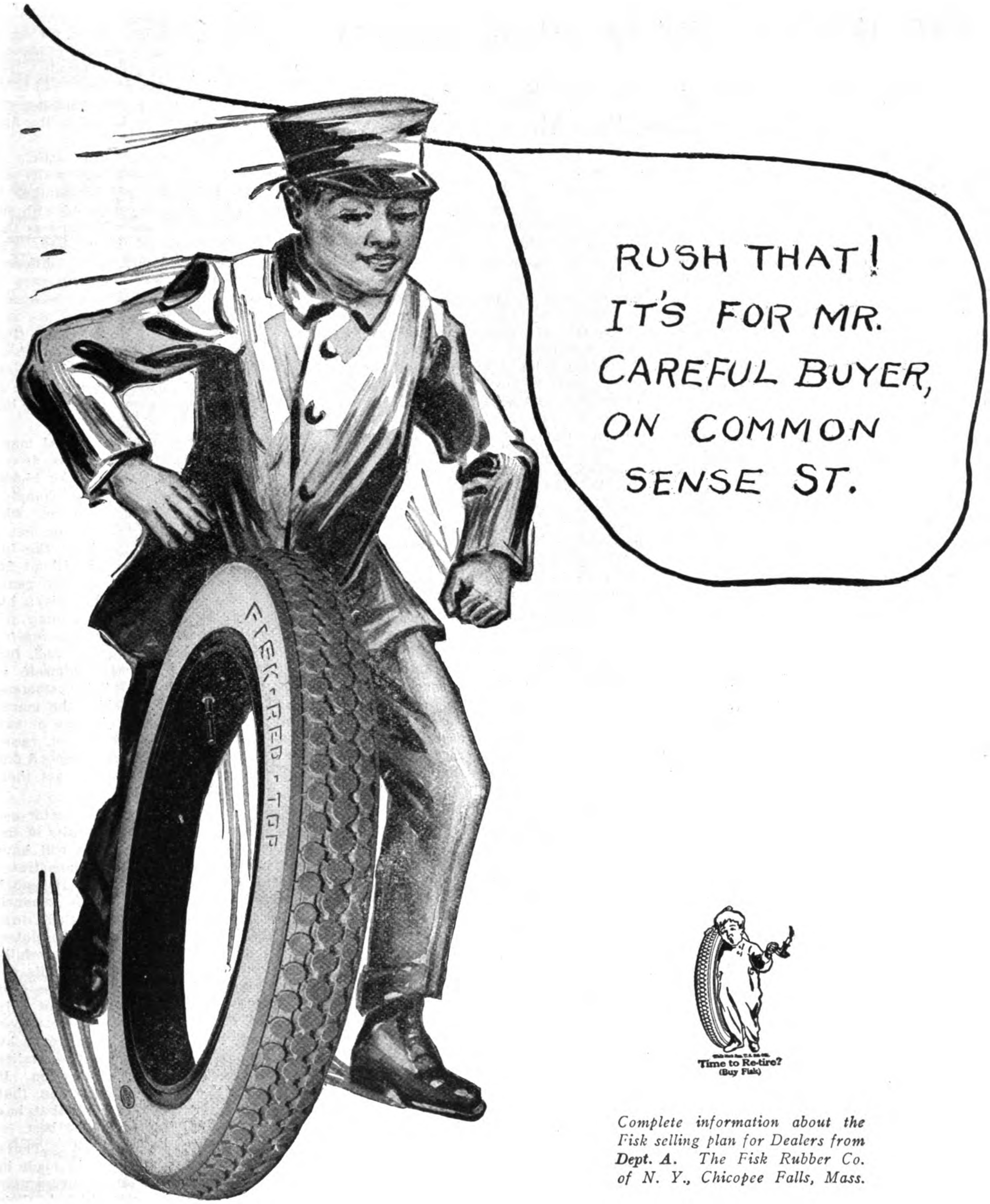
## CECO VALVE ROTATOR.

Distorted valve stems, unevenly worn, and pitted valve faces are three engine evils that make for loss of power and unsatisfactory action. The Ceco valve rotator is an ingenious device, for automatically rotating the valves of an engine, a small portion of a revolution, so that at every up and down motion the valve is seated in a different location.

The device consists of three main parts, A which forms the outside of the rotating member, made of bronze and fastened to the engine cylinder; B, the rotating member which fits into A, and slides upon the valve stem against a small but sharply defined shoulder; and C, which is fastened or locked to the stem and carries a ball thrust bearing for permitting the valve to turn freely against the resisting action of the spring. B and C have ratchet like projections which prevent backlash. As the valve is lifted by the tappet the worm like fitting B is turned in the sleeve A, carrying with it the fitting C and turning the valve a small way. At the top of the lift, and at the beginning of the down stroke the fitting C is separated from B, allowing B to return to its original position without carrying C back. B is carried downward by the spring pressure acting through the shoulder of the valve stem.

It is said that valve action is not hampered in any way, nor is there any attendant noise due to the valve rotator. The device is made in a number of sizes to meet the requirements of the valve assembly of practically any engine of standard make.

**Manufactured by Continuental Engineering Corporation, Omaha, Neb. Write for prices and literature, giving name and model of car.**


RUSH THAT! IT'S FOR MR. CAREFUL BUYER, ON COMMON SENSE ST.
FISK-RED-TOP

Time to Re-tire?
(Buy Fisk)

*Complete information about the Fisk selling plan for Dealers from* **Dept. A.** *The Fisk Rubber Co. of N. Y., Chicopee Falls, Mass.*

# FISK NON-SKID

# THE WHOLE SPARK PLUG STORY

## Delivering the Strongest Possible Spark Continuously the Chief Requisite, Says Mr. Champion[*]

SPARK plugs have been and are still the greatest cause of trouble to automobile users. Certain failures are self-evident, such as the breakage of the insulators and short circuiting by soot and oil, but these being readily detected do not constitute the real problem.

The average driver has experienced at times an inability to get his motor running uniformly, due to no apparent cause. The carburetor or almost any part of the ignition system is blamed and adjustments thought necessary are accordingly made. The valves are examined, carbon removed and, in fact, effort is made to locate the trouble everywhere except where it actually exists. This sometimes goes on for days and even weeks and finally all other ideas being exhausted the spark plugs are replaced with new ones. Immediately the motor performs better and if the proper plugs have been installed the remedy is, so far, permanent. If, however, the same make of plug or another equally inferior grade has been purchased, the trouble will again commence in a very few weeks.

The reason for this is simply the concealed nature of the plug failure. The plugs having been closely examined and appearing to be perfectly good, the conclusion is reached that they are positively all right and the possibility of their in any way contributing to the poor performance of the motor is definitely set aside. It is just this that leads the average driver astray. The spark plugs have ceased to fulfill their mission, viz: —to deliver the spark—due to porous insulation, and this condition exists with practically all makes of plugs on the market today. Instead of a good, strong spark taking place between the electrodes, most of the current leaks through the insulation and therefore at low speed, and on quick pick up when the mixture is not perfect, the very weak spark remaining will not ignite the gas, resulting in a poorly running motor. This inferior insulation which, it is a fact, is to a greater or less extent a cause of inefficient performance on practically all makes of spark plugs when they are new, increases rapidly with the plugs in use. The porosity of the material permits the absorption of carbon and as it becomes saturated therewith the insulator changes form and the electric leakage increases until there is not enough spark left to ignite the gas. This condition is not discernible to the user not technically informed on the subject and he is at a loss to understand why, although the plugs look all right, they will not fire his engine, whereas the installation of a new set effects an immediate improvement.

There are a great many different makes of plugs brought out, each having some new feature which generally consists of an ingenious contrivance affixed to the end of the shell or sometimes a special finish or fancy package. These new types are usually sold with liberal guarantees of repair and replacement and are claimed to be the final solution of the spark plug problem. The improvement, featured, however, seldom lies in the basic design working towards a more gas tight plug or in the quality of the insulation which will tend to eliminate the great trouble users have experienced to date with plugs having or developing electric leakage.

Very few of the spark plug manufacturers will point to what their plugs have actually done or are really doing. It is easy to make claims for one's product, anyone looking for a position can readily recite to his prospective employer the great extent of his knowledge and ability to perform certain duties, but a business man, to ascertain the capabilities of an applicant, will first ask for and investigate his references. Likewise, the safest procedure for the buyer of spark plugs is to, before making his purchase, thoroughly investigate records of actual performances of the different makes, relying not on what manufacturers say their plugs will do, but on what somebody else, in a position to know, says that they have done and are doing. The result will justify the care exercised in this regard in the elimination of unnecessary expenditure for new plugs and what is still more important, satisfaction in the purchase existing in a uniformly good motor performance.

Another point which will doubtless be of interest to the readers of "motordom" is the fact (of course we are excepting our own make, as we are dealing with the subject of spark plugs generally) that the plugs made with porcelain insulators for instance are not as good today as they were 10 years ago. At that time all porcelain used for this purpose was imported from France. This porcelain had good thermo dielectric strength; in other words, the leakage through the insulation was very slight and the insulators would not change form. The plugs in the construction of which it was used were good and performed their function until such time as the porcelain cracked or was broken. The automobile business increased and competition became keen and, of course, nearly all spark plug makers were anxious to establish a source of supply in this country, which was very natural, but all they were looking for was a material that would not break or soot too easily and there was produced what appeared to be a good porcelain for spark plug insulators. Later on it was learned what a great deal thermo dielectric strength and "change of form" had to do with the troubles experienced by the users of motors as explained in the first part of this story.

It is one purpose of this article to show how bad spark plugs really are and a consideration of the number of plugs made today as compared with the number of cars in use will impress this fact on the minds of the readers. The total plugs turned out by the different makers annually will equip all cars in use several times, which simply means that each car in operation must use several sets per year. At the same time we have read much advertising in which it is claimed that in the use of a particular type of plug, spark plug trouble is at an end—plugs are guaranteed for the life of the engine, etc.

Of course there will be a good many readers of this article who have driven their car of a particular make for 15,000, 20,000 or 30,000 miles without changing plugs. These are the fortunate ones who have purchased a make of car, the manufacturer of which has realized the importance of spark plugs and without figuring a difference of one or two cents per cylinder on first cost has given his customers, not only a good running motor, but one that will continue to run for a considerable length of time; and, furthermore, he has benefited himself in that he has made satisfied customers. On the other hand, consider the manufacturers who, in saving the one or two cents per cylinder in initial cost, cause the owners of their product to spend dollars per cylinder in trying to get their motors running properly.

The prospective buyer of a motor car will expect to get as good results in the performance of his motor as will have been shown him by the demonstrator making the sale. Therefore, inasmuch as this little spark plug means so much to him, not only in the matter of future expense, but in the running of his motor, it is most expedient that he carefully examine the plug equipment on his engine, before taking delivery, to see that the spark plugs furnished are not only such as may have been widely advertised, but that have also been proven by genuine performances to be of a quality that will insure lasting satisfaction. It is most advisable, in other words, that he demand the make of plug that has shown by actual test to be the best.

"The best is none too good." There is still great improvement to be made in spark plugs in order that the users may get the perfect efficiency which is their due. Nearly every make of spark plug is advertised to be absolutely and positively gas tight; some manufacturers even claim that the compression will help to tighten the plug. At the same time it is a fact that none have been able to deliver, for aviation work, where plugs that do not leak compression are absolutely essential, plugs that are or will remain gas tight. The engineers for the

(Continued on Page 52.)

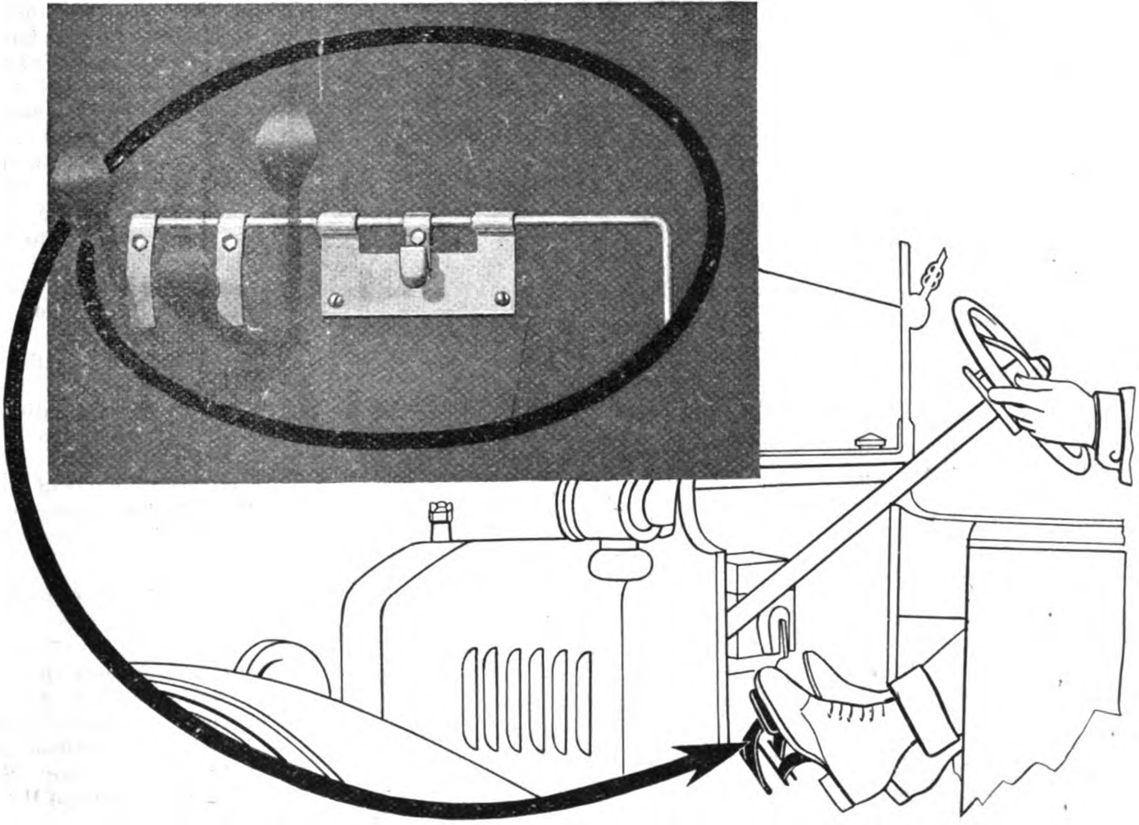
---

[*] Paper by Albert Champion, President Champion Ignition Co., Flint, Mich.

VERSAL PRODUCTS

# SPEEDERATOR FOR FORDS $4.85

***Your Quick Money Stock is Not Complete Without This Mechanical Miracle***



**Absolutely Prevents Engine Racing—Stalling—Bucking—Cuts Down Gas Consumption and Gives the Ford Multi-cylinder Smoothness**

Here is the Ford accessory you can't overlook. It is so good that many officials of the Ford Motor Company use it on their personal cars.

It has been on the market for nearly a year now and more than 25,000 are in use. So enthusiastic are the owners of Speederator-equipped cars with their boosting that we have been forced to enlarge our factory and greatly increase production.

A big national advertising campaign is now telling all Ford owners about the marvelous work of the Speederator.

## What the Speederator Does

The Speederator gives positive automatic control of the engine speed. This eliminates racing, bucking and stalling.

It gives the proper speed always in changing gears.

By preventing racing it saves an average of 15 per cent. or better in gasoline.

It eliminates the necessity of any and all hand operation of the steering post throttle.

The novice can drive the car as easily as the expert driver.

It is particularly appreciated by women as it is practically impossible to stall the engine.

The Speederator comes completely assembled and ready for installation neatly packed in a single carton with complete instructions. Weight two pounds.

Anyone can install it in 30 minutes. Only a wrench and a screw driver are needed and it is not necessary to bore a single hole. It works in conjunction with the foot levers direct to the carburetor.

One on a car in your neighborhood means as many sales as there are Ford owners. Rush your order to your jobber now.

Patented and Made by **The Versal Products Manufacturing Company** Formerly Detroit Starter Company

DETROIT, MICHIGAN

VERSAL PRODUCTS

(Continued from Page 50.)

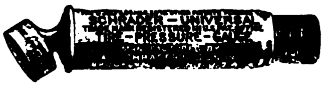
aviation motor manufacturers must certainly find much amusement in the reading of these advertisements, knowing that the very manufacturers whose product is so advertised have failed in their efforts to furnish plugs that would run their particular aviation motor for a given length of time. One of these engineers has remarked that whenever the motors on which he is working start to fail the trouble is immediately attributed to leaky plugs and traced to that source.

The spark plug proposition is a big one; it is a great science and much progress is needed in its development. Not only is good insulation essential, but also good design. We must have gas tight plugs and as well as the leakage through the insulation existing in present types, there is a surface leakage created by the deposits of carbon on the lower end of the insulation, which must be overcome. We need plugs that will keep clean so that in the cold weather with the inferior grade of gasoline now obtainable and the necessity for a rich mixture it will not be necessary to clean the plugs every day or, in fact, take them out of the engine.

The chief requisite in a spark plug is that it deliver the strongest possible spark continuously and that is the whole spark plug story.

## TRUCK TIRE PRESSURE GAUGE.

At the New York automobile show A. Schrader's Son will display, in addition to a very complete series of Schrader products, which will include Universal tire valves, tire pressure gauges, tire pump connections, tire valve repair tools and automatic shut off valves for free air stations in garages, a new tire pressure gauge for motor trucks equipped with pneumatic tires. As shown in the accompanying illustration the gauge has a bent foot or base so that it may be applied to the valves of heavy truck tires, no matter what the space between the wheel hub and felloe. As the pressure for such tires is much greater than for passenger cars, the indicating sleeve is calibrated to register from 30 to 170 pounds, which will be sufficient for tires up to 8½ inches. As truck tires must be carefully maintained to standards the need for new Schrader valve is apparent.

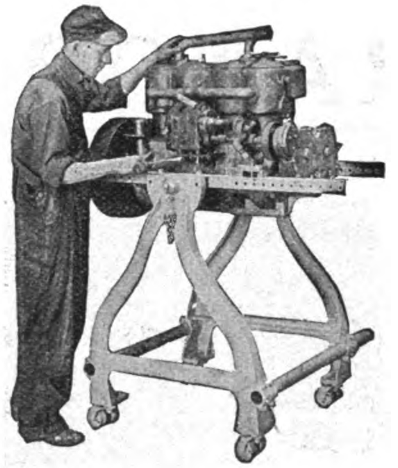


## HARTFORD ISSUES BOOKLET.

The Edward V. Hartford, Inc., Jersey City, N. J., has issued a booklet that will convey to both jobbers and dealers in automobile and accessories facts and testimonials pertaining to the advantage of carrying in stock Hartford equipment.

## CONTINENTAL MOTOR STAND.

Modern garage men are beginning to realize that a workman cannot do good repair work on an automobile engine if he is obliged to crawl under the car or practically stand on his head to make the necessary repairs. The Continental motor stand is a practical solution of the problem.



The Continental Motor Stand.

This device consists of two heavy standards, which are fitted at the upper parts with revolving beams upon which may be mounted an engine. The standards are fitted with cross members and may be adjusted to the width of practically any engine. With an engine in place on the stand it may be tipped at any angle or turned upside down, thus rendering every part accessible for repairs.

The standards are fitted with heavy roller casters so that the stand may be rolled to the machine, the engine placed in it and carried to any part of the shop for machine work.

Special attachments are furnished for the Ford engine, and for other three-point suspension engines.

**Manufactured by Continental Auto Parts Co., Knightstown, Ind. Write for prices.**

## E. A. CASSIDY CO. WILL MARKET RAJAH PLUGS.

The Edward A. Cassidy Co. of New York has taken over the sales department of the Rajah Auto Supply Co. of Bloomfield, N. J., makers of Rajah Spark Plugs and Rajah Spark Plug Terminals, and will have entire charge of the Rajah business hereafter.

The Rajah plug, which is one of the best known brands in the world, has been manufactured for the past 16 years. Many racing cars use Rajah plugs and they are also used by airplane makers and the government Army and Navy planes. The quality of the Rajah plug, together with the extensive prestige in the industry enjoyed by the Cassidy company, makes a strong sales combination.

## A TIP AS TO ENGINES.

Owing to the shortage in the iron and steel markets, due to the demand for war purposes, there is a scarcity of materials for engine manufacture which will manifest itself in higher prices in the near future, as manufacturers who did not contract ahead are now paying higher prices for raw stuff and getting little attention, the manufacturer's pamphlet here under review, declares. Ed. H. Witte, president of the Witte Engine Works, 2280 Oakland avenue, Kansas City, Mo., the largest exclusive engine factory in the world selling direct, says: "We are still offering immediate shipment on both kerosene and gasoline engines in all styles and sizes. I don't know how long we can keep up, but those who order now can get an engine at a favorable price as compared to what we may have to ask later. In view of the fact that labor will be high and men hard to get, a reliable engine is most desirable, as it will take the place of two to six men, according to the work to be done and the size of the engine used. I will be glad to mail my new book, 'How to Judge Engines,' to all who are interested in shop power. This book contains valuable information as to what kinds of work an engine should do, and the kind of engine best adapted for general use with all kinds of fuel." The book will be mailed at once, postage prepaid. upon application to the above address.

## THE TRADE ACCEPTANCE.

A pamphlet, "The Trade Acceptance Nationally Launched," just issued by the Irving National Bank, gives the address of Lewis E. Pierson, chairman of the board, before the National Association of Upholstered Furniture Manufacturers, reviewing the history of the trade acceptance and the circumstances surrounding its introduction in this country. In part he said: "Today, due to an impulse clearly growing out of war spirit, the acceptance is before the country fully accredited, clearly justified and backed by such an array of financial power and business respectability as to make it exceedingly embarassing for the banker or business man who may be disposed to maintain his former attitude of opposition or indifference. Naturally, much still remains to be done, but clearly and beyond doubt the acceptance has landed —has "gone over the top." With the adoption of the trade acceptance by the Goodyear Tire and Rubber Co., Akron, O., one of the largest industrial corporations in America, its progress in the motor trade is growing. The trade acceptance is really a time draft for payment on a future date drawn up by the seller and accepted by the buyer. It has been used in the commercial systems of practically every other civilized business country of the world for many years. but a strenuous campaign has been necessary in this country to induce the merchants and manufacturers to give it a trial.

Over 11,900 retail merchants failed last year

Bankers and wholesalers are interested in these figures. They lose when the merchant fails.

Up-to-date National Cash Registers stop lax methods in Retail Stores—save time, work and money.

And they enable a merchant without delay to give a complete, reliable statement of his business.

Every banker and wholesaler should investigate the N. C. R. System. He will then recommend it to the merchant.

Our registers are sold on small monthly payments. 5 per cent off for cash.

*Write today for literature* *Address Department 36.*

**THE NATIONAL CASH REGISTER COMPANY, Dayton, Ohio**

## INDEX TO ADVERTISERS

Page
A. B. C. Starter Co............Cover
Adamson Mfg. Co.................60
Advance Auto Accessories Corp... 5
American Auto Products Co.......68
American Bureau of Engineering, Inc. ...........................A
American Motors Parts Co.........56
Apperson Automobile Co..........62
Atwater Kent Sales Co............55
Auglaize Motor Car Co............62
Auto Exchange...................56
Auto Parts Co...................55
Auto Salvage Co., Inc............54
Auto Wrecking Co................56

Bacon Service Co.................64
Ballman-Whitten Mfg. Co.........67
Bearings Service Co..............62
Bilodeau Ball Bearing Works......58
Boston Auto Parts Co.............56
Bowser & Co., Inc., S. F..........63
Box A...........................56
Box E...........................56
Brown, Walter H..................55
Brunner Mfg. Co................. 7
Buell Explosion Whistle Co........67
Butler Mfg. Co...................56

Cave Welding & Mfg. Co..........56
Champion Ignition Co.............D
Chase & Co., L. C............Cover
Columbus Varnish Co............ 9
Combination Auto Lock Co........67
Continental Auto Parts Co........66
Corning Glass Works.............11
Corp Brothers....................55
Culver-Stearns Mfg. Co.......... 6
Curtis Pneumatic Machinery Co... 3

Detroit Battery Co...............66
Detroit Magneto Exchange.........55
Dixon Crucible Co., Jos...........61
Dyer Co., G. H.................. 1
Dyneto Electric Corp............. 2

Eby, Henry E., Jr................54

Faw, Inc., J. H...................4
Fisk Rubber Co...................49
Fitzgerald Mfg. Co...............10

Garford Motor Truck Co..........58
Gibson-Hollister Mfg. Co.........58
Grenfield Tap and Die Corp........65

Harvey Spring & Forging Co......68
Heinze Co., John O..............66
Hughes & Co., D. E..............60

Imperial Brass Mfg. Co...........68
Imperial Oil Co..................59
International Lubricants Co........61
International Metal Polish Co.....63

Jackson Motor Car Co............55
Jefferson Electric Mfg. Co.......67
Jenkins Vulcan Spring Co........58

K. B. C. Company................64
Kennedy Car Liner and Bag Co....64

La Fayette Engineering Co........66
Liben & Co., Max.................56

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Rich, artistic designs that ornament any machine and are guaranteed to last as long as the vehicle finish. Can be quickly attached by anyone. Full stock assortment for small investment and each sale yields a big profit. Write today for catalogue and quotations. This is a great business opportunity for road men. Act quick—whole story by return mail.
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Write us for our special discount proposition to you. Our big business has been the result of your co-operation and we are now in a position to partly repay you.
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*Do You Want Foreign Business?*
The Motor Vehicle market of the world is open to all American producers of cars, trucks, parts, fittings, supplies, accessories, mechanical and electrical equipment and tools.
We operate the only direct and certain channel through which to reach this market. This is available to every manufacturer who is seeking foreign agents or correspondents and is preparing for "after-the-war" business.
FOR FOREIGN BUSINESS ACT TODAY.
Automobile Journal Pub. Co. Times Building, Pawtucket, R. I.

## INDEX TO ADVERTISERS

(Continued)

Page
Mabey's Electric and Mfg. Co.....63
Manufacturer 910..................55
Martin Mfg. Co...................60
Maxwell Bros.....................55
Mintz, Hiram.....................56
Mossberg Co., Frank...........Cover
Motor Specialties Co.............12
Motorists Accessories Co..........54
Mueller & Co., R. S..............61

National Cash Register Co.........53
New Departure Mfg. Co...........64
New Era Spring and Specialty Co..68
New Haven Screw Co............55
Niehoff & Co., Inc., Paul G.........63
Norma Co. of America............65

Pierce Governor Co...............58
Pillsbury Mfg. Co.................57
Prest-O-Lite Co., Inc..........B-C-60
Puritan Machine Co...............56

Page
Ross-Gould List and Letter Co.....58

Scaife, Wm. B. & Sons Co.........60
Schrader's Son, Inc., A.............13
Service Gear and Machine Co......55
Specialty Mfg. Co.................56
Starrett Co., L. S..................14
Stevens & Co.....................66
Stockbridge Body Co..............57
Sullivan Motor Car Co............58
Superior Mfg. Co..................60

Toledo Gas Engine Works........64

United Engine & Mfg. Co.......... 8
United States Air Compressor Co..59
U. T. O. Co.......................55

Vanderpool Co.....................67
Versal Products Mfg. Co...........51

Walden-Worcester, Inc.........Cover
Weston Electrical Instrument Co..62
Williams Foundry and Machine Co.61

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**AUTO PARTS**

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We furnish parts at a saving of

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We can also Repair your Radiator, or Make, or Repair your Fenders, Hood, Tanks, Boxes, Pans or Sheet Metal Parts.

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Special price on
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**SALESMAN** selling garages, Newark, Jersey City, Elizabeth, Paterson, Passaic, to handle good selling side line. Commission basis. Address Wrenches, Box A, Care A. & G. Journal.

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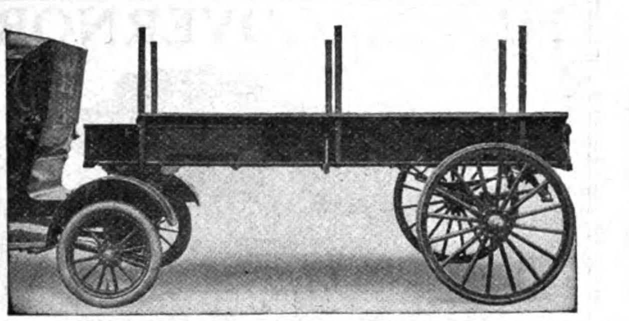
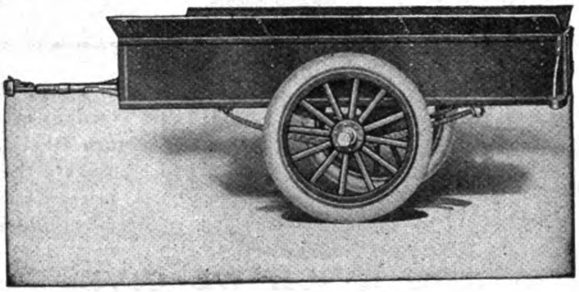
**SALESMAN** selling garages, Yonkers, White Plains, New Rochelle, Mt. Kisco, Mamaroneck, etc., to handle good selling side line. Commission basis. Address Jacks, Box E, Care Accessory and Garage Journal.

---

**BUSINESS OPPORTUNITY**—Store on Court street, principal street of Binghamton, N. Y.; steam heated, modern plate glass front; in busy section of the street; rent good for any retail business; rental, including heat, $55 per month. For particulars inquire of HIRAM MINTZ, Binghamton, N. Y.





# Haul a 3000-lb. Load With Your Ford Car

A Ford runabout equipped with a Rocking Fifth Wheel, will have light truck capacity when used with **STOCKBRIDGE** 2000 or 3000 pound semi-trailers, and by uncoupling the body, which can be done in a very few minutes, the machine has all the utility of the pleasure car.

**STOCKBRIDGE Semi-Trailers** are the most practical equipment built. They are designed for truck service. They are operated with Ford economy. They can be coupled or uncoupled by any driver without help. The Rocking Fifth Wheel is easily removed. No time is lost. Simply remove six bolts. The owner has a car or a unit with truck capacity and makes no sacrifice of the qualities of either type of vehicle.

The car and semi-trailer can make 20 miles an hour on good roads and can climb any travelled grade.

**STOCKBRIDGE Semi-Trailers** are constructed for truck service. The bodies are express type, with flareboards or flareboards and stakes. The brief specifications are:

| | 2000 Pounds | 3000 Pounds |
|---|---|---|
| AXLE | 1 5-8 in. square, Timken roller bearings. | |
| SPRINGS | Platform type, 1 3-4 in. wide | Platform type, 2 in. wide |
| WHEELS | 46 in. outside diameter, artillery type hubs, 1 5-8 in. spokes | |
| TIRES | Solid rubber, 1 3-4 in. flat top. side wire | 2 in. flat top. side wire |
| EQUIPMENT | Complete Rocking Fifth Wheel ready for attaching | |
| PRICES | $195, f. o. b. Springfield, Mass. | $225 f. o. b. Springfield, Mass. |

**SPRINGFIELD TRAILER,** 800 pounds capacity, express body, semi-elliptic springs, 1 1-4 in. axle, ball bearings, 12-spoke automobile wheels, 30x3 in. pneumatic tires, price **$105,** f. o. b. Springfield.

**STOCKBRIDGE BODY COMPANY,** 130-6 UNION STREET
SPRINGFIELD, MASSACHUSETTS

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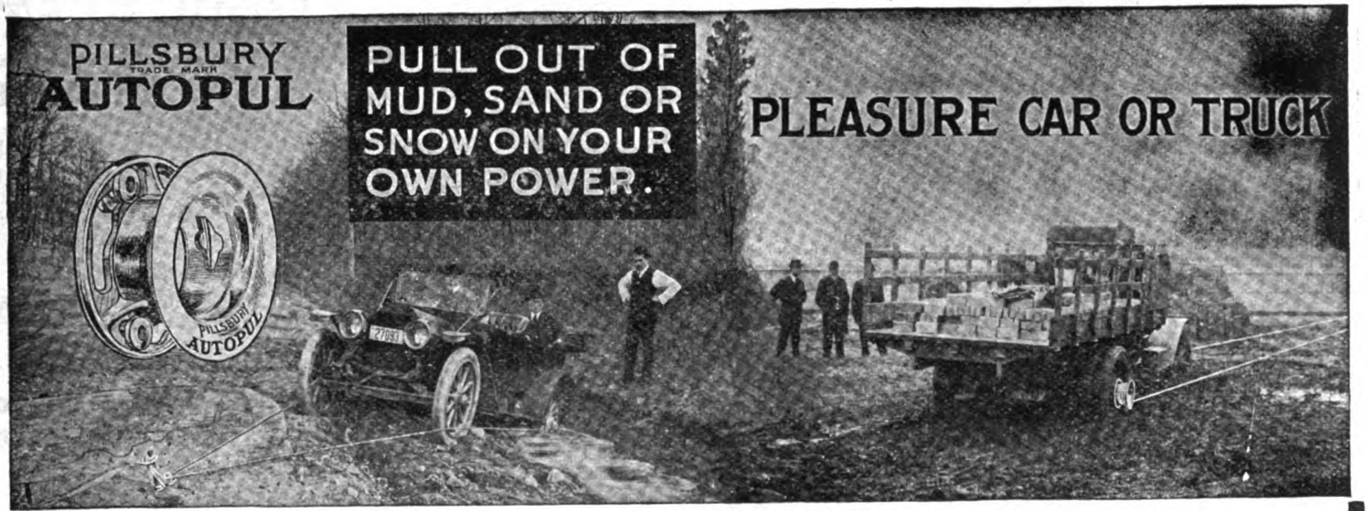

## All Highways are Passable—With a PILLSBURY AUTOPUL

**An equipment, either permanent or quickly fitted to any car or truck, with which a ditched or bogged or tractionless vehicle can be drawn to a solid surface.**
**The outfit can be carried constantly, requires but small space and is very light. Machines can be drawn forward or back as is necessary by their own power.**

*LIST PRICE, COMPLETE FITTINGS*

| | |
|---|---|
| Automobile Size, Japanned | $8 |
| Automobile Size, Nickeled | $13 |
| Truck Size, Japanned | $8 to $35 |

**Indispensable for any truck, an ideal touring equipment, PILLSBURY AUTOPUL is a practical utility and an economy.**
**It consists of two winding drums, two special cable hooks and locking bolts and nuts. Stakes and cable furnished as extras, the cable or rope in lengths to meet any requirement.**

**PILLSBURY HUBPUL** **For Ford and model 490 Chevrolet cars—a combination Hup-Cap, Wheel Puller and Auto Capstan, consisting of two hub drums, two spoke hooks and wheel puller cap screw.**

| | |
|---|---|
| Complete Set, Japanned | $4 |
| Complete Set, Nickeled | $6 |

*All quotations f. o. b. Minneapolis, Minn.*

*DEALERS AND JOBBERS: We have a big sales proposition for you. Write for it today.*

**PILLSBURY MANUFACTURING COMPANY, Minneapolis, Minn.**

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**Guaranteed Bearings**

We Exchange Rebuilt Bearings For Old or Worn Ones

We credit the value of worn Bearings toward the price of our rebuilt ones

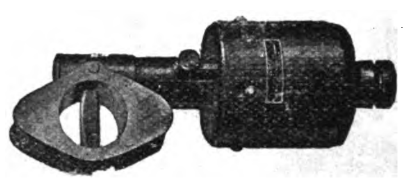
THE SERVICE WE GIVE

We save you time and money and guarantee the quality of the bearings sold. This service is quick and is developed to meet the needs of thousands of garages, service stations and repair shops.
We build bearings of all kinds, experiment and originate bearings for special uses. Our work is unequaled for accuracy and perfection. The materials are the best and service and satisfaction are guaranteed.
Prices are always the lowest consistent with the work.
Orders for new bearings of any type or size promptly filled.

**Send today for 1917 catalogue, listing types, sizes and prices of standard bearings. Trade discounts confidential.**

**BILODEAU BALL BEARING WORKS**
66 Stanhope Street, BOSTON, MASS.

**PIERCE GOVERNORS**



are a positive guarantee of motor truck efficiency, because they provide automatic speed control. Now standard equipment

**On 64 Makes of Motor Trucks**

No better proof of superiority could be offered.

**PIERCE GOVERNOR CO., Anderson, Ind.**

**Garford MOTOR TRUCKS**

Trucks of 1, 1½, 2, 3½, 5 and 6 ton capacity. 4½, 7 and 10 ton Tractors.
The Garford Road Builder.

**THE GARFORD MOTOR TRUCK CO., Lima, Ohio.**

**Do Business by Mail**

It's profitable, with accurate lists of prospects. Our catalogue contains vital information on Mail Advertising. Also prices and quantity on 6,000 national mailing lists, 99% guaranteed. Such as:

War Material Mfrs.
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*Have us write or revise your Sales Letters.*

Ross-Gould, 1015K Olive Street, St. Louis

**ROSS-GOULD Mailing LISTS St. Louis**

**SELL SULLIVAN TRUCKS**

One of the few staple and practical trucks on the market.

Our selling policy and proposition is the most liberal ever offered to the trade.

**One Model, 3,000 Lbs. Capacity**
**Chassis Price, $1,600**

***Write for complete details***

**SULLIVAN MOTOR CAR CO.**
**Rochester, New York**

JUMBO
MOLITE
MADE IN USA

**NO MORE RUST!**

**The clean, non-rusting, non-corroding "NONCORO" FINISH on JUMBO SPARK PLUGS**

means absolute freedom from rust throughout the life of the plug. This new finish is a handsome gray which still further enhances the value of the world's super-plug.

**The 50 Cent Price**

makes Jumbo Spark Plugs the most profitable buy for dealer and driver.

***DEALERS! Get in touch with your jobber now!***

**Gibson-Hollister Mfg. Co.**
Central States Branch St. Louis, Mo. SPRINGFIELD, MASS.

**The Automobile Journal**

A magazine that is read by more than 20,000 car owners every issue.

***It Will Interest You—***

Send for sample copy. Times Bldg., Pawt., R. I

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QUALITY
AUTOMOBILE SPRINGS

*SPRINGS IN STOCK FOR ALL CARS*

90,000 Springs. 588 Types.

6—FACTORY BRANCHES—6

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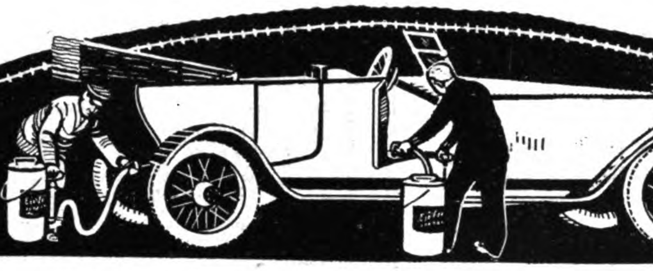
FACTORY RICHMOND, IND.

**JENKINS VULCAN SPRING CO.**



**DEALERS,**
**GARAGE and**
**REPAIRMEN**
**WE OFFER YOU**

# FREE

**One Self-Measuring Grease Cabinet with Order for Barrel or Half Barrel**

**EVR-LASTIN**
**GEAR COMPOUND**

**It saves time and labor in serving your customers.**

**1-2 Barrel, per lb. $.16**
**1 Barrel, per lb. .15**

**Order through your Jobber or write us direct.**

## New and Clean Method of Serving

# EVR-LASTIN
# GEAR COMPOUND

***The Perfect Lubricant for Transmissions and Differentials***

**Takes the place of Heavy Transmission Oil**
**Takes the place of Transmission Greases**
**Takes the place of Fibre Greases**
**Takes the place of Mixed Oil and Cup Grease**

Use 50 to 75 per cent. less to start with and ride twice as far as before without replenishing.

EVR-LASTIN GEAR COMPOUND is the most unique achievement of modern oil and grease chemistry, is ***neither oil nor grease.***

Majority of manufacturers are using this class of goods.

## JOBBERS

There are good profits in selling

**EVR-LASTIN**
**GEAR COMPOUND**

Don't fail to show it in your catalogue. We co-operate with and sell through Jobbers only. We are prepared and WILL fill your orders promptly. Write or wire for our liberal proposition.

# IMPERIAL OIL COMPANY

3124 LOCUST STREET ST. LOUIS, MO.

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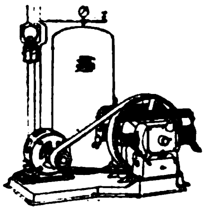
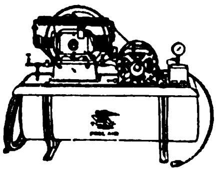
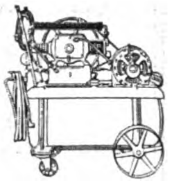
## *Only 6 of 19 Different Sizes and Types*



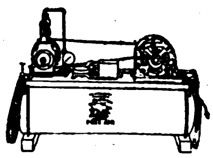
**Two Stage Duplex Automatic Air Plant.** Equipment 48, capacity 20 cubic feet per minute.



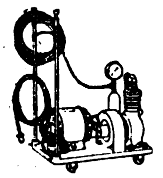
**De Luxe Two Stage** Complete Automatic Unit. Capacity four cubic feet per minute. Self contained. Runs from lamp socket.



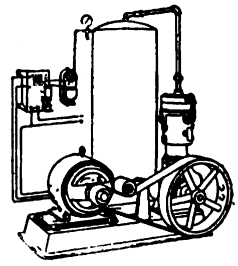
**Portable Two Stage Compressor.** Equipment 35, capacity four cubic feet per minute.



**Single Stage Complete Automatic Air Unit.** Equipment D-22. Capacity 2½ cubic feet per minute.

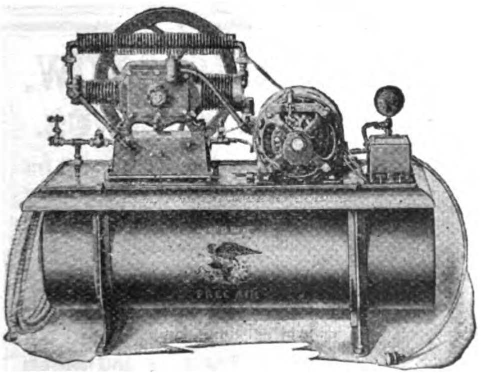


**Single Stage Portable Direct Inflation Air Unit.** Equipment G-12, capacity 1¼ cubic feet per minute.



**Single Stage Water Cooled Complete Automatic Air Plant.** Equipment G-15. Capacity 21 cubic feet per minute.

## ↓The Leader of a Complete and Remarkably Successful Line



The De Luxe Complete Automatic Unit is unequalled in all 'round features. It maintains high pressure in great volume, is extremely quiet, handsome in appearance, entirely automatic in operation, self-oiling and requires only a minimum of attention.

THE Two Stage principle of operation as utilized in United States Air Compressors has been proven absolutely unequalled and the perfected compressor combined with various tank equipments until the line is now as complete as can be desired, incorporating units for every requirement.

The leading number of the line is described on this page and several of the other units referred to briefly. Several other units are manufactured and compressors without any equipment whatever may be purchased if desired.

In addition to United States Two Stage compressors a complete line of Single Stage Compressors is manufactured as briefly described. These are as efficient and highly refined as it is possible to produce under the Single Stage principle.

Send for our new 32 page catalog just off the press.

**SEE US AT THE AUTO SHOWS**

**New York, Space D-15, Fourth Floor, Grand Central Palace, Jan. 5th-12th.**

**Chicago, Space 3, Coliseum Basement, Jan. 26th-Feb. 22nd.**

**Boston, Space 518, Mechanics Bldg. March 2nd-9th.**

**The**
**United**
**States Air**
**Compressor**
**Co.**
**Cleveland, Ohio**

Please send your catalog as advertised in the Accessory & Garage Journal, to address written on margin.

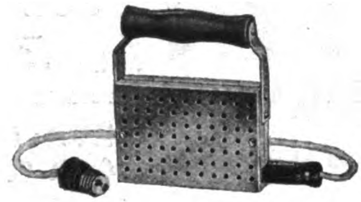
# The United States Air Compressor Co., 6538 Carnegie Ave., Cleveland, O.

## Elektro Auto Engine Heater

TO GO UNDER THE HOOD

***Engines Kept Warm in Cold Garages or During Winter Parking***

**Can be used in any car.**
**Heat where you want it, in the coldest weather.**
**Engine starts right off. Saves your starter.**
**A slow heat all night at a nominal cost.**
**Absolutely safe around gasoline. Heat well regulated.**



**10 feet of Cord with Plug Complete**

**LIST PRICE $3.00 LIBERAL DISCOUNTS**

**No more frozen radiators or cranky cranks.**
**No more hot water baths needed for the carburetor.**
**No more priming or radiator draining nuisances.**
**Just what everybody has been looking for.**

*Send for Circular 129*

**D. C. HUGHES & COMPANY**
MANUFACTURERS

*A Complete Line of Percolators, Toasters Flat Irons, Stoves, Toy Ranges, Etc.*

4642-44 Ravenswood Ave. Chicago, Ill.

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## THE NEW ADAMSON MODEL "E" 5-MINUTE VULCANIZER

Motorists everywhere are sold on the advantages of a good vulcanizer. There is a big demand for all sizes. Adamson dealers can meet the demand because this line is COMPLETE.

**DEALERS: Order from your jobber today.**

**ADAMSON MFG. COMPANY**
EAST PALESTINE OHIO

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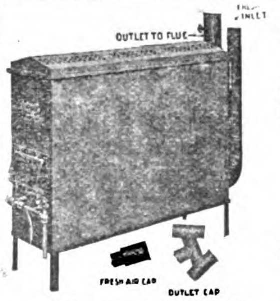
## "SUPERIOR" Safe Garage Heater



**Safest and Best Heater for Garages of All Kinds**

***BURNS NATURAL OR ARTIFICIAL GAS***

**All air taken from outside building.**
**Gasoline fumes cannot enter heater.**

*Dealers Make Good Profits. Write!*

**SUPERIOR MANUFACTURING CO.**
N. S. PITTSBURG, PA.

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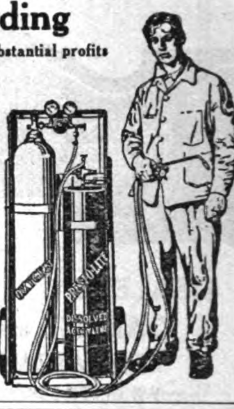
## Add to Garage Profits by Oxy-Acetylene Welding

**Savings made please your patrons and pay good substantial profits**



**PREST-O-LITE**
**Dissolved Acetylene**
**(Ready-made carbide gas)**

adds to the efficiency and usefulness of any good welding equipment. We furnish thoroughly high grade welding apparatus for $75.00. (Canada $100.00). The average user will also need gas cylinders at an additional cost, and about $10.00 worth of welding supplies. Truck and special equipment for cutting operations at extra cost.

***Send for details of Prest-O-Lite Service for Oxy-Acetylene Welding.***

**The Prest-O-Lite Co., Inc.**
*World's Largest Makers of Dissolved Acetylene*

Main Office & Factory, 309 Speedway, Indianapolis
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WM.B.SCAIFE & SONS CO.
PITTSBURGH, PA.
BRAZED AIR TANK

## SCAIFE COPPER-BRAZED AIR TANKS

are positively guaranteed to hold air indefinitely without loss of pressure.

**CAUTION**

Do not confuse Scaife Copper-Brazed Tanks with the cheap Welded or Soft-Soldered Tanks made by others.

**We Also Manufacture**
**SCAIFE GASOLINE STORAGE OUTFITS**

*Send for Catalogues.*

**WM. B. SCAIFE & SONS CO.,**
First National Bank Bldg. PITTSBURGH, PA.

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## The MANLEY GARAGE AND SHOP EQUIPMENT

Every garageman and repairman should get our catalog. You'll find in it just the time and labor savers you need, and their prices will astonish you by their moderateness.

*Send for your copy of this catalog today*

THE UNITED ENGINE & MFG. CO.
Hanover, Pa.

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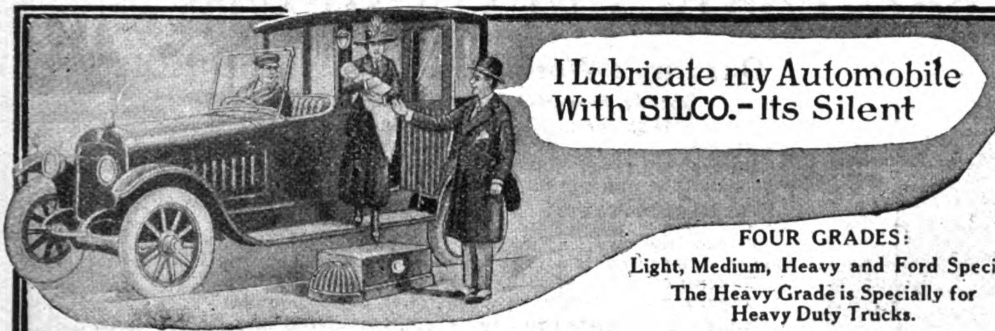
## BUY FORD HOOD COVERS NOW.

**BUY FROM US.**

If you are in the market for quality covers at quantity prices write today for details and trade discounts.

We want your orders. Tell us your requirements. This is the time for you to "get in" on big sales and profits that will surprise you.

**MARTIN MANUFACTURING CO.**
LANCASTER OHIO


I Lubricate my Automobile With SILCO.-Its Silent

AUTOMOBILE SMOOTH SILCO AS SILK LUBRICANTS

FOUR GRADES:
Light, Medium, Heavy and Ford Special.
The Heavy Grade is Specially for Heavy Duty Trucks.

SILCO is the perfect lubricant for transmission and differential gears. It possesses far greater lubricating properties than ordinary greases. It forms a positive and lasting cushion between all points of contact, and quiets noisy gears. Silco does not leak or drip, and its efficiency is unaffected by heat or cold.

SILCO minimizes friction, and eliminates expansion from heat, thus preventing undue wear on gears and bearings. Cuts repair bills and is guaranteed to afford entire satisfaction.

*Jobbers and Dealers: Our inducements are extremely liberal. Send for further lubricating facts and special trade discounts.*

*WRITE TODAY TO*

**INTERNATIONAL LUBRICANTS COMPANY**
Manufacturers of SILCO Products
Home Office: 75 State Street, Boston, Mass.
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THE CONGDON & CARPENTER CO., Rhode Island Distributors, Providence, R. I.

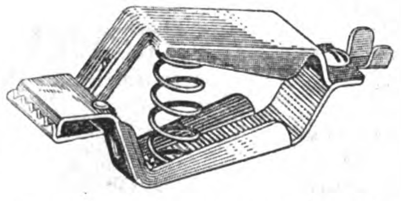
LOOK FOR THIS TRADE MARK
IT PROTECTS THE DEALER AND CONSUMER
**SILCO**
TRANSMISSION AND DIFFERENTIAL GREASE
STOPS THE LEAKS
FINDS THE SQUEAKS
INSURES CAR SERVICE

**DO TIRE REPAIRING-**
as a separate business department of your Garage. Business easy to get, grows steadily, and pays well; only small capital required and opportunity everywhere. For best work and surest profits use

**Akron-Williams**
TIRE REPAIR EQUIPMENT
*Used and recommended by 60 Leading Tire Companies*
*Send for booklet No. 12 and catalogue on complete outfits for every size garage.*

**THE WILLIAMS FOUNDRY & MACHINE CO.**
Ash Street, Akron, Ohio

**Hook Up Your Batteries With Universal Battery Charging Clips**



They enable you to charge lighting and starting batteries without disconnecting them from the car.
Made of steel—lead plated—may be used over and over again.
No. 21-A—1½" spread of jaws.
Sample mailed postpaid for 15c in stamps.
Single Lots, Each 20c Lots of 10, Each 15c Lots of 100, Each 12 1-2c
R. S. MUELLER & CO., 431 High Ave., S. E., Cleveland, Ohio.

DIXON'S GRAPHITE GREASE
ORDINARY LUBRICANTS

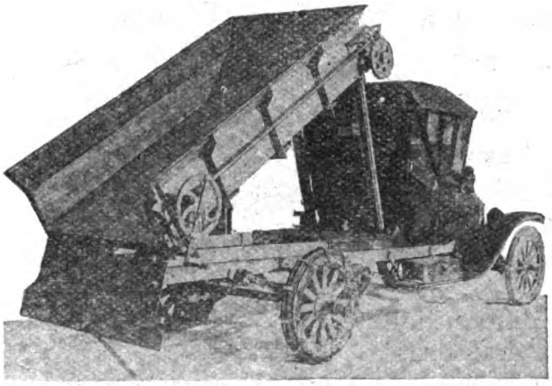
**Your Customers' Confidence**
in you will be measured by their confidence in the lubricants that give 100% service.

**DIXON'S GRAPHITE Automobile LUBRICANTS**
will give your customers 100% service and increase their confidence in you.

*Write to us for Dixon's Dealer's Deal No. 49-G*

Made in Jersey City, N. J., by the
**JOSEPH DIXON CRUCIBLE CO.**
Established 1827

# SPECIAL FOR FORD ATTACHMENTS



## Quadruple Worm Gear Drive HAND HOIST

**Speedy, Powerful, Light in Weight and very Efficient**

Price $206.25 for body and hoist complete ready to mount on chassis frame.

Bodies two sizes, capacity in pounds the same.

Size of the one cu. yd. body 96x44x12 in., straight sides only. Carrying capacity from 2700 to 3000 pounds of gravel, sand or crushed stone.

Size of the two cu. yd. body, 96x44x12 inches with flare of 6 inches. Carrying capacity from 2700 to 3000 pounds of soft coal.

The retail price of either outfit is $206.25.

Approximate weight of either body is 550 pounds.

**Builders of Holsts ranging in capacity from one to five tons.**

***Ask for dealer's proposition***

THE AUGLAIZE MOTOR CAR CO.
New Bremen, Ohio

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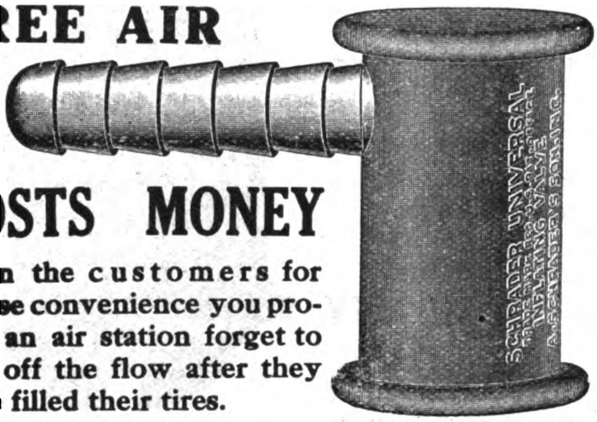
# FREE AIR



# COSTS MONEY

**when** the customers for **whose** convenience you provide **an** air station forget to **turn** off the flow after they **have** filled their tires.

**Guard against this waste by attaching a**

## Schrader Automatic Inflating Valve

**to your air hose.**

**Thanks to this appliance your bottled air locks itself into the tank the minute it is taken off the tire-valve. You turn on the air by pressing the nozzle of the inflating valve against the tire-valve and you turn it off by removing the device from the tire-valve.**

**Made to fit any diameter of hose from 1-4 in. to 5-8 in.**

**PRICE $1.25**
**in U. S. A.**

***Manufactured by***

**A. SCHRADER'S SON, Inc.**
**800 Atlantic Avenue, Brooklyn, N. Y.**

***Schrader products were awarded a Grand Prize and two Gold Medals at the Panama Pacific International Exposition. "There's a reason."***

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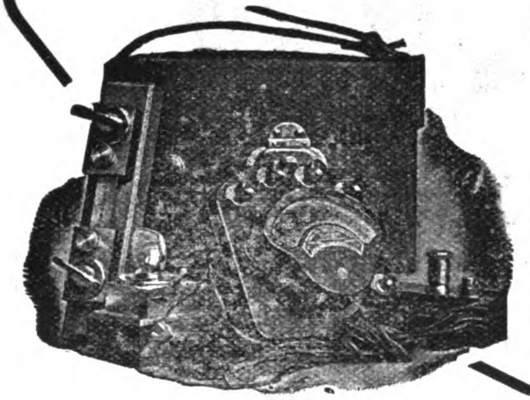
# *Which Garage Man Gets the Money?*



If you can repair and adjust Electrical Equipment, you will get the cream of the garage business. With the increasing demand for service of this sort, you must equip to handle the business, or lose it to your more enterprising competitor.

**Model 280**

## Weston GARAGE TESTING INSTRUMENT

is your one great and urgent necessity, to enable you to locate electrical troubles quickly and apply the proper treatment to remedy them. Its possession will place you a long way ahead of your competitor not so equipped. This instrument is extremely accurate, durable and serviceable. It is the most practical electrical equipment you can install.

The Weston Company is pre-eminent throughout the world in the production of highest grade Electrical Precision Instruments.

WRITE US NOW for our Special Proposition to Garage Owners. It will show you how you can handle electrical apparatus intelligently and profitably.

**WESTON ELECTRICAL INSTRUMENT CO., 103 Weston Ave., Newark, N. J.**
*23 Branch Offices in the Larger Cities*

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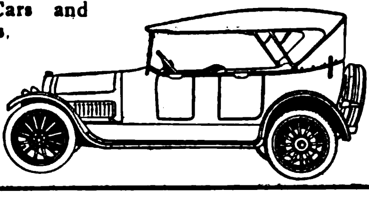
# APPERSON EIGHT

**Over 80 Parts Have Been Eliminated** from engine — the simplest built, producing from 48 to 56 H. P. 6,000 to 12 000 tire mileage. Lowest cost of upkeep. Ask your dealer to explain and demonstrate Eights, Sixes, Touring Cars and "Chummy" Roadsters.



**APPERSON**
**AUTOMOBILE CO.**
**Kokomo Indiana**

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Nation-wide Service on Bearings

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**San Francisco**
**Chicago**
**Los Angeles**
**Detroit**
**Boston**
**Seattle**
**Atlanta**
**Portland, Ore.**
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**Cleveland**
**Rochester**
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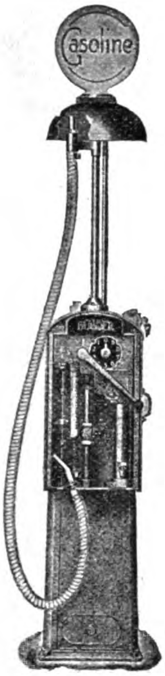
**Denver**
**New Orleans**
**Indianapolis**
**Toronto, Can.**

# Service Multiplied



Your customer of today calls louder and louder for "Speed." To him, quality and quantity without speed no longer constitute Service. Speed is his word—it means money to him.

The assistance, therefore, of equipment designed to meet the need of the hour is necessary, and you get it in

**BOWSER**
ESTABLISHED 1885

## *OIL and GASOLINE STORAGE SYSTEMS*

They store any amount of oil or gasoline—keep it in perfect condition; discharge quickly the exact amount of pure, filtered gasoline, directly into customer's car; show at a glance the correct charge. It's all done in a moment—no waiting, inconvenience or bother. Saves his time and yours.

*Write for interesting literature*

**S. F. Bowser & Co., Inc.**
**Ft. Wayne, Indiana**

Sales Offices in All Centers.
Representatives Everywhere.

BOWSER SERVICE

---

ELECTRIC GLUE POT

Mabey's Dry Heat Electric

## Glue Pot

No flame; no soot or smoke. All danger of fire is eliminated

| Capacity | Price without cover |
|---|---|
| 1 qt. | $ 9.50 |
| 2 qts. | 11.00 |
| 3 qts. | 12.75 |
| 4 qts. | 15.75 |

Century Automobile Cigar Lighter, Complete $1.00 Each, F. O. B. Indianapolis.

*DEALERS—Write For Prices.*

**MABEY'S ELECTRIC & MFG. CO.**
968 Ft. Wayne Avenue INDIANAPOLIS, IND.

---

PAUL G. NIEHOFF & CO.
METALLURGICAL LABORATORIES

## Have you received your copy?

It is a *Book of Knowledge* that enables you to become an electrical expert in your automobile work. No more guessing at what you need. It is a complete illustrated catalog of contacts, starter and generator brushes. *Free* to every repair man. This is a line that will build up a splendid business. Ask about our Cash Register of contact parts proposition. Write today.

**PAUL G. NIEHOFF & CO., Inc.**
**Metallurgical Laboratories** Clark St., at Kinzie, CHICAGO, ILL.

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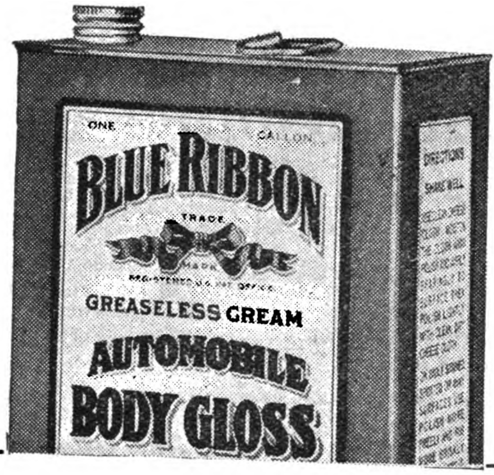
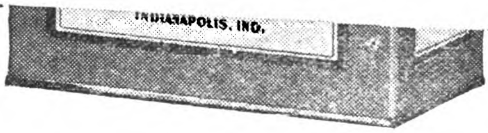


## KEEPS THE BODY OF YOUR CAR *Shining* LIKE A MIRROR

No Grease to Catch Dust
Does Not Coat the Finish
Best Furniture Polish Made
Use With Spray if Desired

**International Metal Polish Co.**
INDIANAPOLIS, INDIANA



# SAVE ONE THIRD OF Your Gasoline Cost

## and Start Your Car Easily on the Coldest Day

This new invention of the Hot Pin Manifold actually increases the mileage of each gallon of gasoline from 40% to 60% according to the present efficiency of your motor. The average is a saving of about one-third of the gasoline bills.

We have been making kerosene carburetors for five years and this invention is the result of our experiments and the developments of our kerosene carburetor, as gasoline today contains a large percentage of kerosene.

This Hot Pin Manifold simply gives you the same sort of volatile gas from present grades of gasoline that you formerly got from 76° test gasoline.

Motor Troubles today are more often due to the condensation of kerosene in the cylinders than to any other cause. The kerosene washes down past the piston rings, ruining the lubricating oil and causing undue wear of bearings, pistons and cylinders.

### HOT-PIN MANIFOLD

cures these troubles by converting every particle of fuel into good explosive gas before it enters the cylinders, and by using the fuel that is now wasted saves one-third the expense.

### Immediate Delivery for Fords

We are prepared to ship immediately all orders for Hot Pin Manifold for Ford cars and within a very few weeks for Continental Truck motors, Cadillac and Maxwell, and rapidly thereafter all the leading makes of cars of large production.

### A Money Back Guarantee

goes with every Hot Pin Manifold. Any purchaser that for any reason does not want it can return it at any time within 30 days and his money will be cheerfully returned.

### Exclusive Territory

is now being allotted to dealers. Where we are not represented we want the livest man in each locality, and he will be given the exclusive sale on an extremely liberal basis. Where we have no dealer we will ship direct to users on receipt of the regular price, which is.......................... **$16.50** including the best primer you have ever seen, which would retail alone for $6.00.

### Dealers Act Quickly

Order a sample on your letterhead and it will be promptly shipped C. O. D. at the wholesale price, and you will find you have the biggest money maker you have ever known and a particularly good WINTER SELLER.

**K. B. C. Company**
DEPT. E
**2015 Michigan Avenue, Chicago**
*Makers of K. B. C. Kerosene Carburetor*

# Push Your Business —

*I'll Show You How to Increase Your Winter Trade.*

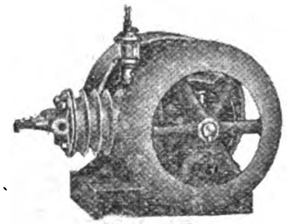
THERE is business all around you. Good, profitable business that will bring in many an extra dollar. Don't wait for spring. Do business all winter. I'm helping garage men and supply dealers to do more business. I'll help you. Write on your business paper that you're ready for more business. I have nothing to sell but service backed by nine years' experience in promoting sales successfully.

*Write*
**Edward W. Bacon**
**BACON SERVICE**
151 Grand St., New York

# THE GARAGE Compound Air Compressor

Two in One

Uses less power than ordinary Air Compressors and yet does not cost more.

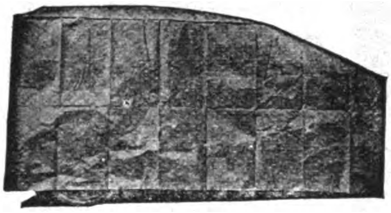


(Patented)

If you are interested in Air Compressors it will pay you well to investigate this equipment.

Manufacturers of Gas and Gasoline Engines.
Electric Farm Lighting Outfits. Ford Electric Lighting Systems.

**TOLEDO GAS ENGINE WORKS,** 28-30 Ottawa Street, TOLEDO, OHIO



# KENNEDY AUTO STORAGE COVERS

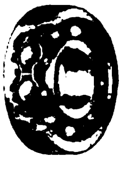
Furnish efficient and economical protection for cars in dead storage. They are made of heavy, durable paper in standard sizes to fit any cars.

MADE ONLY BY

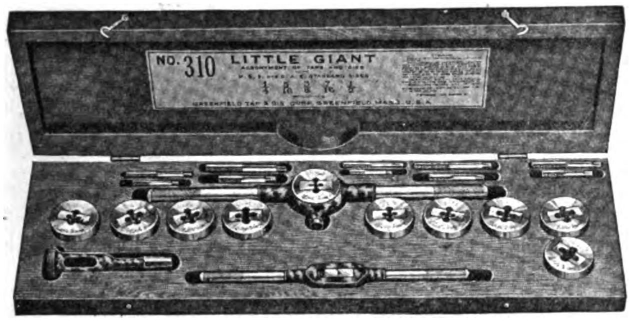
**THE KENNEDY CAR LINER & BAG CO.**
SHELBYVILLE, IND.

# NEW DEPARTURE BALL BEARINGS

*Strength*
*Stamina*
*Service*

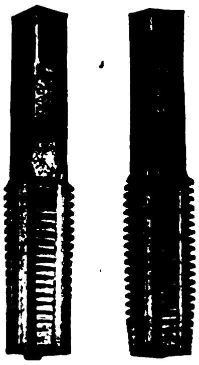


The New Departure Manufacturing Co., Bristol, Conn.
*Conrad Patent Licensee*



Little Giant Screw Plate

# The Complete Line of Threading Tools



Hand Taps

Whatever your requirements in the screw cutting line may be, we can meet them, as our line is the most complete in the world. Bear in mind that our service in the threading tool line is unexcelled.

Ask for a copy of our No. 37 general catalog which contains besides the products listed below many tables of valuable information for garage repair men, etc.

Below is a partial list of products shown in the catalog.

Little Giant Die

**Taps**—All kinds, for hand and machine use, in all thread standards.

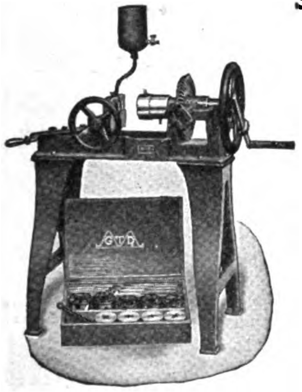
**Dies**—Several styles, for hand and machine use, in all thread standards.

**Screw Plates**—Many styles and assortments for bolts, nuts and pipe, with Automobile (S.A.E.), U.S.S. or V threads, combination assortments with both U.S.S. and S.A.E. thread taps and dies.

**Pipe Tools**, Wrenches, Vises, Cutters, Stocks and Dies.

**Reamers**—Hand and Machine, bit brace and straight shanks, all types.

Send for a catalog for ready reference.



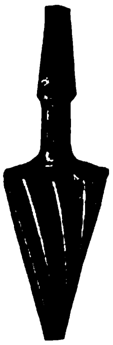
G.T.D. Threading Machine

G T D

## Greenfield Tap and Die Corporation

**Greenfield, Mass.**

New York, 28 Warren St.
Chicago, 13 South Clinton St.
London, 149 Queen Victoria St.
Canadian Factory, Wells Brothers Company of Canada, Ltd., Galt, Ont.



G. T. D. Burring Reamer

# "NORMA"

# BALL BEARINGS

(Patented)

Failure of a bearing in a magneto is equivalent in effect to failure of the power plant. Failure of a bearing in a lighting generator is in effect a failure of the lighting system. Either will surely mean dissatisfaction—either may mean disaster and loss.

**The proved speed and service qualities of "NORMA" Ball Bearings have resulted in their adoption as standards by practically all makers of high-grade magnetos and lighting generators—those used on cars and trucks of the better class.**

**Be *Sure*—See That Your Electrical Accessories Are "NORMA" Equipped**

## THE NORMA COMPANY OF AMERICA

**1790 BROADWAY NEW YORK**

**Ball, Roller, Thrust and Combination Bearings.**

## Continental Motor Stand

**USED AND RECOMMENDED BY**

*Automobile Manufacturers* *Motor Manufacturers*
*Truck Manufacturers* *Garages*
*Tractor Manufacturers* *Service Stations*
*Aeroplane Manufacturers* *Repair Shops*
*United States and Foreign Governments*
*Wherever motors are built or repaired.*

**SOLD BY ALL THE LEADING JOBBERS**

MANUFACTURED BY

**CONTINENTAL AUTO PARTS CO.**

KNIGHTSTOWN, IND., U. S. A.

Pacific Coast Representative: Detsch & Co., 1111 Post St., San Francisco.
New England States Representative: John V. Wilson Co., Boston, Mass.

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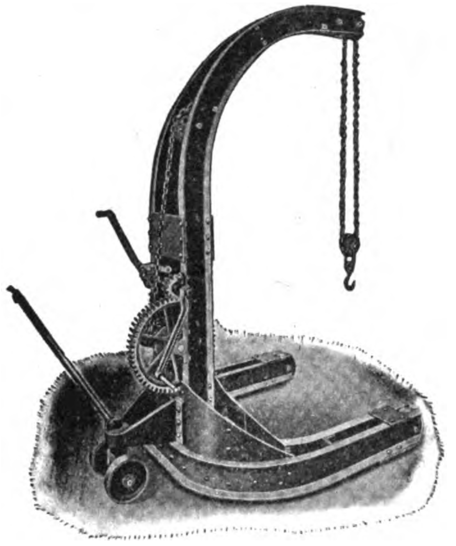

SAFETY FIRST

## *The "Lafayette" Portable Steel Crane*

Made of steel—it will not break. Double locked with load. Safe. Low base. Ample power. Roller bearings. No garage or repair shop can afford to be without them. A complete hoisting and conveying machine.

STANDARD SIZES

| No. | Height | Overhang | Capacity | Ht. of Base | Weight | List |
|---|---|---|---|---|---|---|
| 6 | 8′-6″ | 3′-6″ | 5000 lbs. | 8 inches | 900 lbs. | $100.00 |
| 5 | 7′-6″ | 3′-0″ | 4000 lbs. | 7 inches | 700 lbs. | $85.00 |
| 4 | 6′-6″ | 2′-6″ | 3000 lbs. | 6 inches | 500 lbs. | $70.00 |

*For Sale by Jobbers Everywhere or Write*

**The LaFayette Engineering Co., Mfgr's, LaFayette, Indiana**

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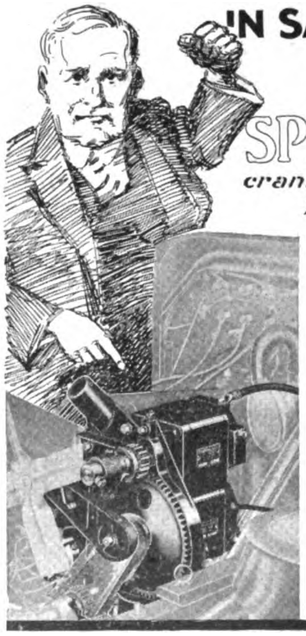
## The "TURNOVER" is there!

**IN SALES** *—as well as in mechanism*



HEINZE SPRINGFIELD

*cranking & lighting system for FORD cars*

**LEADS IN SALES**

Comparative statements from 353 Ford dealers prove more dealers are handling Heinze Springfield than any other one make of starter, and that dealers handling the Heinze-Springfield with other makes sell far more Heinze-Springfields than any other kind. Comparison also quickly proves the Heinze-Springfield System the greatest value in its field. It is the only system for Fords selling for $85, complete with Ammeter, Dash Light, Tail Light, Dimmers and Lock.

The dealer arrangement is based on our conviction that the desirable dealer should realize worth while profits.

THE JOHN O. HEINZE COMPANY

Springfield,
Ohio, U. S. A.

**Real Points About the Heinze-Springfield System.**

1. A Two Unit, Six Volt, Single Wire Cranking and Lighting System Bendix Drive.
2. Nothing visible with hood closed.
3. No interference with engine accessibility.
4. Installed complete in four hours.
5. No power drain on motor.
6. Patented mounting plate and chain adjustment insures QUIETNESS. Prevents BROKEN CHAINS.
7. Highest QUALITY, most COMPACT, most CONVENIENT combination Dash Switch, Ammeter, and Dash Lamp.

---

# DETROIT BATTERIES

**For every make and model of motor car carrying an electric starting system. Replacements on cars no longer manufactured can be had promptly.**

**Detroit Battery Co.**
**Detroit, U. S. A.**

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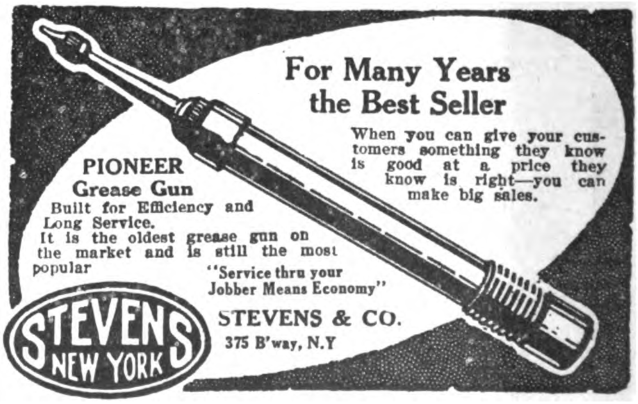


**For Many Years the Best Seller**

When you can give your customers something they know is good at a price they know is right—you can make big sales.

**PIONEER Grease Gun**

Built for Efficiency and Long Service.
It is the oldest grease gun on the market and is still the most popular

"Service thru your Jobber Means Economy"

STEVENS NEW YORK

STEVENS & CO.
375 B'way, N.Y

THE
BUELL
EXPLOSION
WHISTLE

**Proved Superiority Has Made This Signal Standard Equipment on the Following Trucks**

White
Master
Gabriel
Sandow
Lamson
Kimball
Pierce-Arrow
Little-Giant
Old Reliable
Palmer-Meyer
Hendrickson
Mack
Doane
Gary
Lemoon
Columbia
Wichita
Klemm
Fargo

**THE U. S. GOVERNMENT steadily increasing the number of Buell Explosion Whistles on trucks used in Postoffice and War Departments.**

## THE BUELL EXPLOSION WHISTLE

Stands supreme. An entirely new type warning device. **Not** an **Exhaust Whistle.** But an **explosion** whistle. Screws in place of priming cup. Blown by direct explosion. Possesses widest tone range of all.

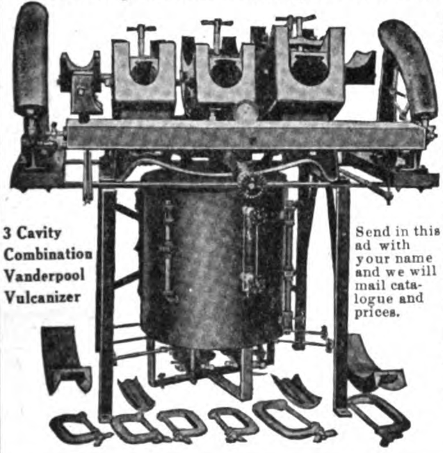
**Never Fails**—Can't clog. Nothing to get out of order. First low cost only cost. Most economical signal on the market.

A trial will convince **you** of its superiority.

Write for particulars.

*BUELL EXPLOSION WHISTLE CO.* *1610 Michigan Ave.*
*Chicago, Ill.*

## Vulcanizing With a Vanderpool Vulcanizer Brings Big Profits



**3 Cavity Combination Vanderpool Vulcanizer**

Here is an exceptional opportunity for Garages as well as Vulcanizing Companies to secure a vulcanizer that will turn out high-grade work at a small cost. The fuel saved alone will pay for the machine in a short time—then you will "cash in" on your investment. This plant, the Vanderpool Vulcanizer, is meeting with enthusiastic approval of hundreds of satisfied users all over the country. Unsolicited testimonials from the various companies now using the "Vanderpool" testify to the dependability, efficiency and economy of this "Vulcanizing Wonder." One man writes that the first month's profits paid for the plant. No experience needed—we teach you how. It occupies very little floor space, and "once bought, you will never have to buy again."

Send in this ad with your name and we will mail catalogue and prices.

**VANDERPOOL CO.**

**Springfield, Ohio**

## B-W DIRECT CURRENT

20
10
0
10
20
DISCHARGE
AMPERES
CHARGE
B-W MFG. CO.
ST. LOUIS, MO.

STURDILY CONSTRUCTED to retain accuracy under the most severe conditions. Handsome in appearance. Made in both flush and surface types. Finished in bright nickel or black rubberoid as desired.

**Better Ammeters Cannot Be Purchased,**
**PRICE.......$1.90**

***Send For Literature***

**Ballman-Whitten Mfg. Co.,**
**4440 Olive St. St. Louis, Mo**

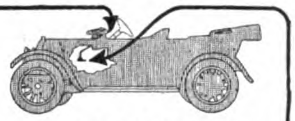
## AMMETERS

## *The Automobile Journal*

A quality Magazine with prestige and circulation that brings results to advertisers.

TIMES BUILDING
PAWTUCKET, R. I.

## *Locks the Carburetor the Heart of Your Car*



## COMBINATION AUTO LOCKS

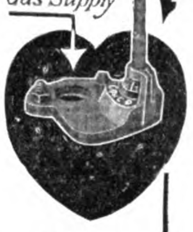
COMCO AUTO LOCK

100% THEFT PROOF

The "Comco" while the simplest is the one positive automobile lock made. It affords any number of combinations. No keys or plugs are used and when locked gas cannot reach the engine. It cannot be picked, broken or removed. One turn of the dial on dash stops the gas supply and it is as easily operated at night as in the day time.

The "Comco" is guaranteed to be theft proof. It can be attached on any car in 30 minutes by anyone and it will last for years.

*This cuts off Gas Supply*



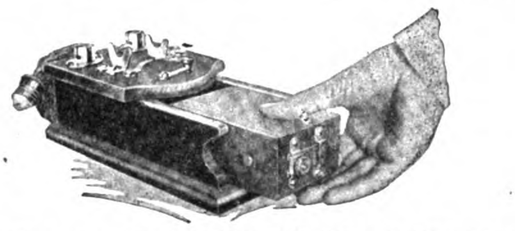
**"Comco" Standard $10.00**
**"Comco" Ford Special 7.50**

COMCO
COMCO
Auto Lock

**Jobbers and Dealers:**
This is the kind of a lock that you can sell. Send today for full descriptive matter and discount sheets.

**This counter demonstrator free to dealers ordering 12 or more "Comco" locks.**

**COMBINATION AUTO LOCK CO.,** **1134 Chestnut St.,**
**St. Louis, Mo**



## FOR A POSITIVE TEST AND ADJUSTMENT

Use the Jefferson Ford Unit and Combination Tester which is designed primarily for testing Ford coil units. It will also test automobile lamps, electric horns, spark plugs, various types of coils, battery jars; locate short circuits, grounds, etc. and start the Ford engine in cold weather.

These instruments are so complete with their many different attachments that they immediately become a necessity and money-saver to every dealer, garage and service station, large or small.

| | |
|---|---|
| **No. 28 Ford Unit and Combination Tester (for use with alternating current) . . . .** | **$8.00** |
| **No. 30 Ford Unit and Combination Tester (for use with storage batteries or dry cells).** | **$6.00** |

**Write today for detailed descriptive matter and terms**

**JEFFERSON ELECTRIC MANUFACTURING CO.**
**428 S. GREEN STREET** **CHICAGO, ILL.**

# *Eliminate All Risk By Using Free From Acid* KANTFREEZE

Imperial
Kantfreeze
RADIATOR COMPOUND
NON-CORROSIVE
NON-EVAPORATING
NON-CLOGGING
CONTENTS 6½ LBS. NET
MADE ONLY BY
THE IMPERIAL BRASS MF'G CO.
1200 WEST HARRISON ST. CHICAGO

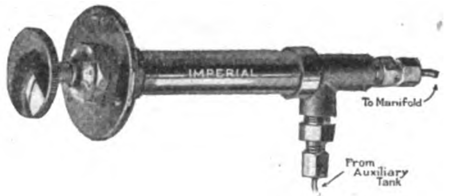
Every motorist has been on the lookout for an anti-freeze preparation that not only is better and more economical to use than alcohol, but that positively will insure the "Safety Always" kind of winter protection to radiators.

Here it is—*Imperial Kantfreeze Radiator Compound,* the fully-tested, high-quality product of the manufacturer with a national reputation for perfecting devices and preparations that make wintertime motoring more of a pleasure and less of an expense.

At one-third the cost of alcohol you can use Kantfreeze and *know* absolutely that all winter long you will be free from a radiator freeze-up. Moreover, alcohol is vital to victory now. You should not use it.

Don't depend on an unknown anti-freeze preparation to give good results. Rely on Kantfreeze, which is 99% pure.

Imperial Kantfreeze Compound is absolutely free from acid. It cannot cause corrosion or injure the rubber hose or other parts of the cooling system. When used according to directions you will be assured of a factor of safety far greater than with any other compound or liquid on the market. One application is sufficient for the whole winter if properly applied.



**Motorists everywhere know of the Imperial Primer —the marvelous device which *Starts Your Motor Instantly in Cold Weather.* Simple to operate and fits on every make of car. Price for complete outfit, including Auxiliary Tank is $6.00.**

**DEALERS: Imperial Kantfreeze Radiator Compound and the Imperial Primer are a strong combination for swelling wintertime profits. Write today for details of our proposition.**

**IMPERIAL BRASS MANUFACTURING CO.**

**517 S. Racine Avenue · Chicago, Ill.**

---

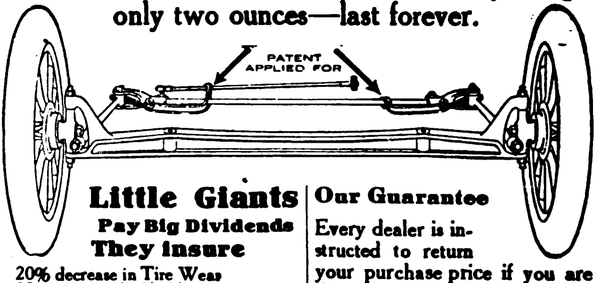
**FORD OWNERS**
**That rattle means steering trouble**
**STOP IT!**

by investing **75c** in a pair of

# LITTLE GIANTS

**(SPRINGS)**

They will save you money and ward off danger. You can install them in a minute for all you need to do is snap them in place. They weigh only two ounces—last forever.



**Little Giants**
**Pay Big Dividends**
**They insure**

20% decrease in Tire Wear
30% " " Skidding
40% " " Accidents
50% " " Bushing Buys
75% " " Nerve Strain
100% " " Rod Rattle

**Our Guarantee**

Every dealer is instructed to return your purchase price if you are dissatisfied. The **Little Giants** do the same work when installed on Dodge, Maxwell and other cars.

**Order Through Your Dealer** If he does not carry **Little Giants** in stock he will get them for you. Should there be no dealer available we will fill your order if you remit direct to us.

**THE AMERICAN AUTO PRODUCTS CO., Dept. A.**

**1120 S. Michigan Ave.**
**Chicago, Ill.**

**240 S. Broadway**
**Denver, Colo.**

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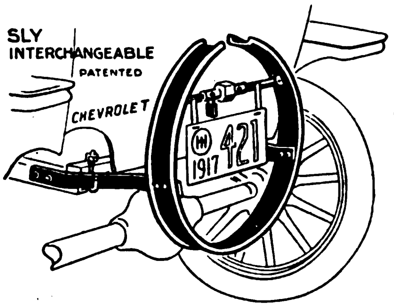


**SLY**
**Interchangeable and Cradle Type**

**TIRE HOLDERS**

**Interchangeables quickly adjustable for all Ford and Chevrolet tires and demountable rims. Combines place for lamp, number plate, lock and tire, holding by expansion grip on inside of tire. No chafing. Clamps to Ford or Chevrolet frame without drilling or bolting. At all jobbers, or write**

**New Era Spring & Specialty Co.**

**1177 Hamilton Ave. Grand Rapids, Mich.**

---

# Real Harvey RACINE Service

Speed in delivery, quality in materials, dependability in performance, accuracy in fit—these are the things which will win for you the loyalty and friendship of your customers—these are the things which combine to make Harvey Service predominant in the motor trade.

**There's A Harvey Jobber Near You**

**Drop us a card and we will send you his name and our Spring Book giving complete weights, styles, measurements and prices of over 900 different kinds of springs. Write today—you may need Harvey Help tomorrow.**

**Harvey Spring & Forging Co.**
**851 17th St., Racine, Wis.**

# PISTONS FOR THE FORD

## REGULAR WEIGHT

Made of a close-grained grey-iron.

Grinding Finish

Complete with Rings, Pins and Bushings

*Manufactured in Both Standard and Several Oversizes.*

*With or Without Bushings*

*Fitted with LAP JOINT Rings—a decided advantage over the diagonal cut usually furnished.*

**PRICE TO GARAGES AND DEALERS, $1.25 COMPLETE**

**When fitted with one TAYLOR RING on each piston $6.33 per set.**

## SPECIAL LIGHT WEIGHT

ONE Pound lighter than the Standard Ford Piston

Will not vary in weight more than TWO OUNCES

**REDUCES BY FOUR POUNDS THE WEIGHT OF RECIPROCATING PARTS**

Possesses all the advantageous features of alloy and aluminum pistons without their bad features, such as slapping, oil throwing, seizing and poor compression.

This piston is tough, durable, absolutely round, perfectly machined, has domed head, uniform walls, special oiling features and is accurately fitted with special lap joint rings.

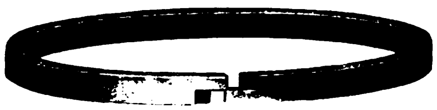
**DECREASES** the crank shaft, wrist pin, connecting rod, piston and cylinder wear!

**INCREASES** the speed!

**INCREASES** the acceleration!

**DECREASES** the vibration of the car; the gasoline and oil consumption!

**DECREASES** the chances of a knock in the motor!



## TAYLOR RINGS for FORDS

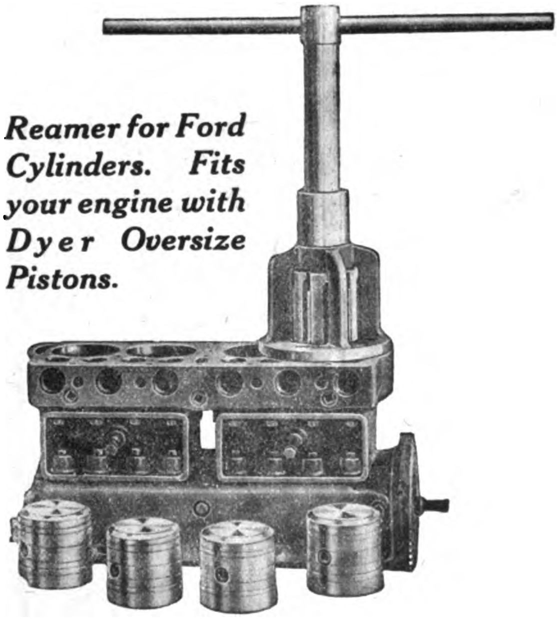
*In Standard and Oversizes*

A strong absolutely round, one-piece ring, carefully machined and ground to size. An eccentric ring with a joint which is actually leakproof, compression-tight and which is designed to compensate for wear and yet be gas-tight and oil-tight when the joint is open 1-8 of an inch.

***STOPS*** Loss of Compression, Oil Throwing, Carbon Troubles.

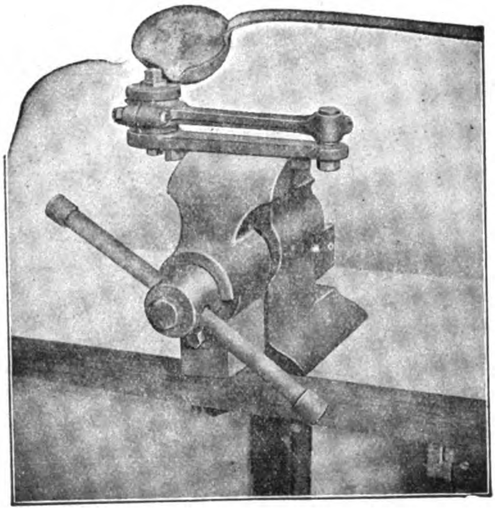
***GIVES*** More Miles on Gas and Oil. Strong Continuous Service From the Motor.

It is impossible for carbon to collect and force open the joint of the Taylor Ring which bears and wears uniformly at all points on the cylinder wall.



*Reamer for Ford Cylinders. Fits your engine with Dyer Oversize Pistons.*

## REBABBITTING JIG



## For Ford Connecting Rod Bearings

**WILL PAY FOR ITSELF IN THE FIRST JOB OR TWO**

**WRITE FOR COMPLETE CATALOGUE**

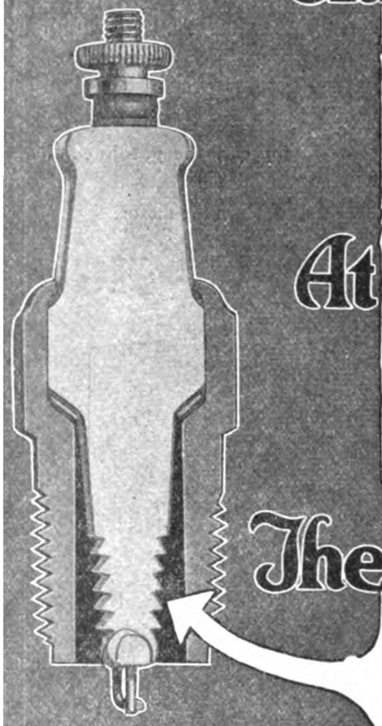
**THE G. H. DYER CO., - - Cambridge, Mass.**

# Announcing The New A.C. Carbon Proof Spark Plug

**Here** is the first plug made which will not accumulate carbon! It will permanently rid motorists of that trouble which has been their bugbear in the past.

**This New** AC has been tested for a year on a number of cars and tractors using both gasoline and kerosene in which ordinary plugs would "soot up" rapidly. The perfect results obtained by this new AC have exceeded our highest expectations.

**At Last** Ford, Overland and Studebaker owners—this is the plug you have wanted to keep your motors hitting on *all* cylinders *all* the time.



Price $1.00

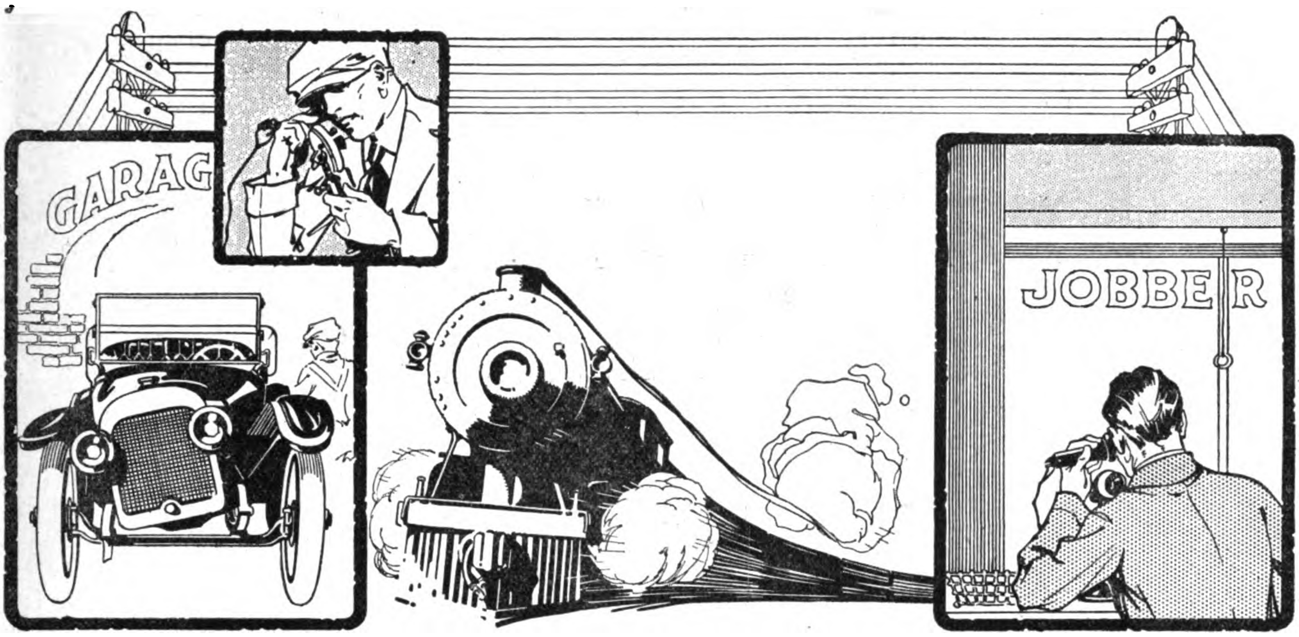
## The Reason

A deposit of carbon on the smooth surface of the porcelain is what causes short circuit. In this new AC plug the carbon proof porcelain is provided with a number of ribs having saw tooth edges. These attain a sufficiently high degree of heat to burn away the carbon thereby keeping the edges free from deposits and breaking up any possible short circuit.

**Dealers:** To secure your share of AC Carbon Proof business, order now and be sure of quick delivery.

AC The Standard Spark Plug of America

CHAMPION IGNITION COMPANY
Sole Manufacturers Flint, Michigan



# RUSH!

When the hurry-up order comes—when an excited customer rushes in and wants a new spring *at once*—when every minute counts—when you are placed on your mettle by a demand that seems almost out of reason— How will you meet it?

Will you simply hold up your hands and say "It can't be done?" Or will you

## Get The Nearest Harvey Jobber On The Wire—

tell him your needs, and send the customer away pleased at the knowledge that his car will be on the road again, in better shape than ever before, within a few hours?

Make use of Harvey Service. It is designed to help you in emergencies.

### There's a Harvey Jobber Near You

Drop us a card and we will send you his name and our catalog giving measurements, weights and sizes of over 900 different styles of Springs and other valuable information that you should have. Write today — you may need Harvey Help tomorrow.

Harvey
RACINE
PRACTICALLY
UNBREAKABLE

**Harvey Spring & Forging Co.**

915 - 17th St. Racine, Wis.

# Transportation is the foundation of Progress

WITHOUT transportation we cannot have production; labor would be helpless.

Without transportation we cannot gather raw materials or develop unfinished products.

Without transportation we would practically stand still in economic and social development.

Transportation is one of the most important factors in building up any country.

Today it is of still greater importance to the U. S. and the Allies in the winning of the war in which we are now engaged.

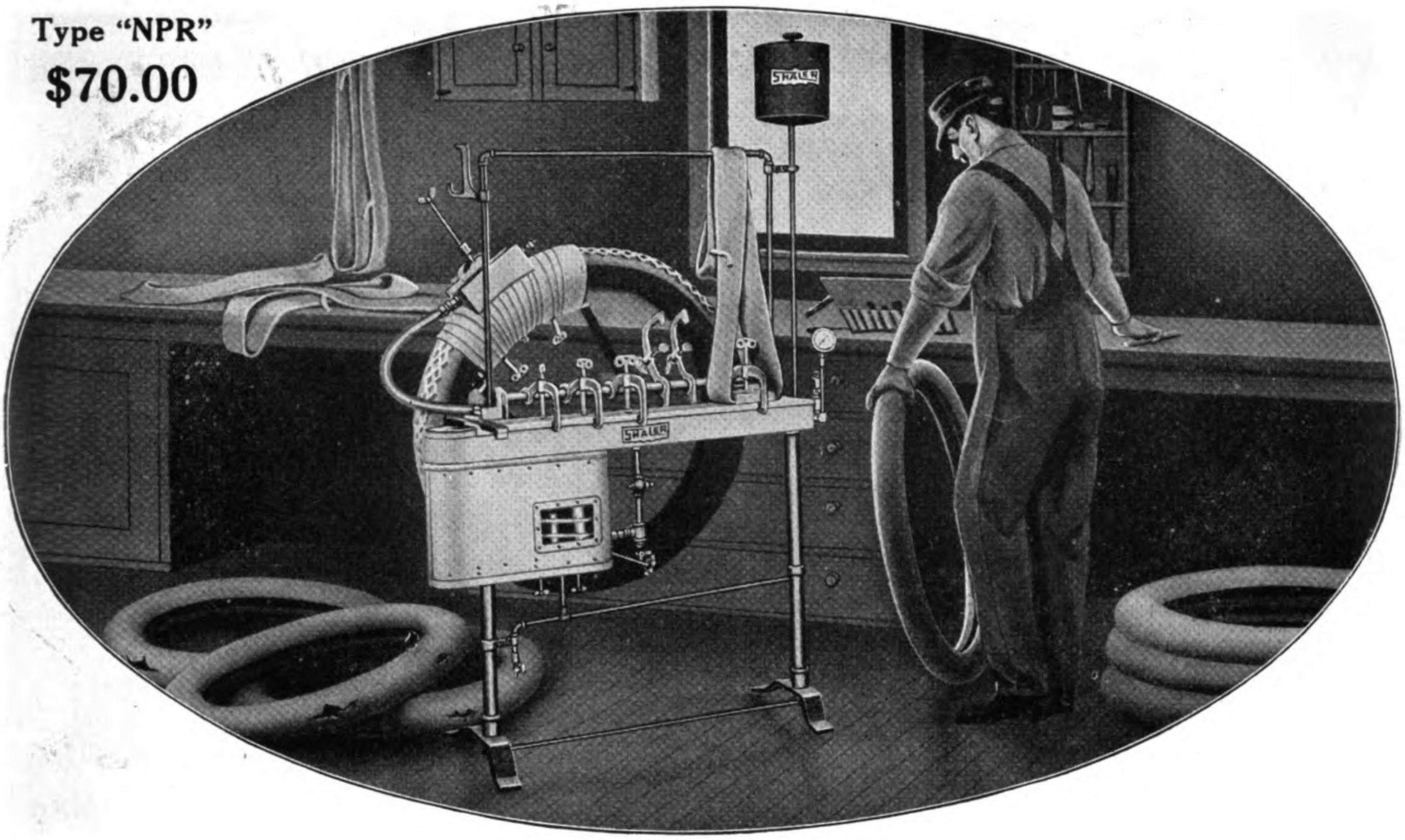
The public highway must take its place in our great system of transportation and to accomplish this we must build and maintain highways to meet traffic requirements.

Garford MOTOR TRUCKS

**The Garford Motor Truck Company, Lima, Ohio**

**Manufacturers of Motor Trucks of 1, 1½, 2, 3½, 5 and 6 ton capacity. 4½, 7 and 10 ton Tractors**
**The Garford Road Builder**

Type "NPR"
**$70.00**



# 8,000,000 Tires Need Repairs!

The yearly cost of *repairing* these tires is estimated at ONE HUNDRED MILLION dollars—the greater part of this huge sum goes to the aggressive garage men, accessory dealers and repair shops who are doing tire repairing!

Think what a field there is in tire repairing! In your own locality there are enough motorists to keep you busy—and how many more are passing every day? Every one is a customer—not merely for one job—but four or five repairs at one time!

# SHALER Vulcanizer

## *For Repair Shops and Garages*

Successful results are certain with the SHALER Vulcanizer. You don't need experience—just follow instructions—to turn out perfect jobs.

By the new SHALER Wrapped-Tread Method, casings are mended quicker, better and at less cost to you than with other vulcanizers using the old method.

The SHALER Vulcanizer has thermostatic heat control, which regulates the temperature automatically. This makes an explosion impossible, prevents overheating or undercuring the tire—and leaves you free to devote your entire time to repairing.

Any style or size of casing or tube can be repaired. The SHALER Vulcanizer occupies no more space than a bicycle, and can be moved about easily. Equipped for gas, gasoline or electricity—to suit your shop.

## Large Capacity—Tubes and Casings

The SHALER Vulcanizer is absolutely high grade—designed for practical vulcanizing and intended for large volume of work. It handles six tubes and one casing AT ONE TIME—a total of 200 tubes and 12 casings in eight hours.

Figure out for yourself what this daily capacity of the SHALER Vulcanizer will mean! Consider the handsome profits it will *earn* for you—*every day in the year!*

Mail the coupon for our book telling all about SHALER Garage and Repair Shop Vulcanizers. It explains fully every detail of the vulcanizers—and tells all about the SHALER Money-Back Guarantee. Fill out and mail the coupon NOW—it will be your first step toward bigger profits.

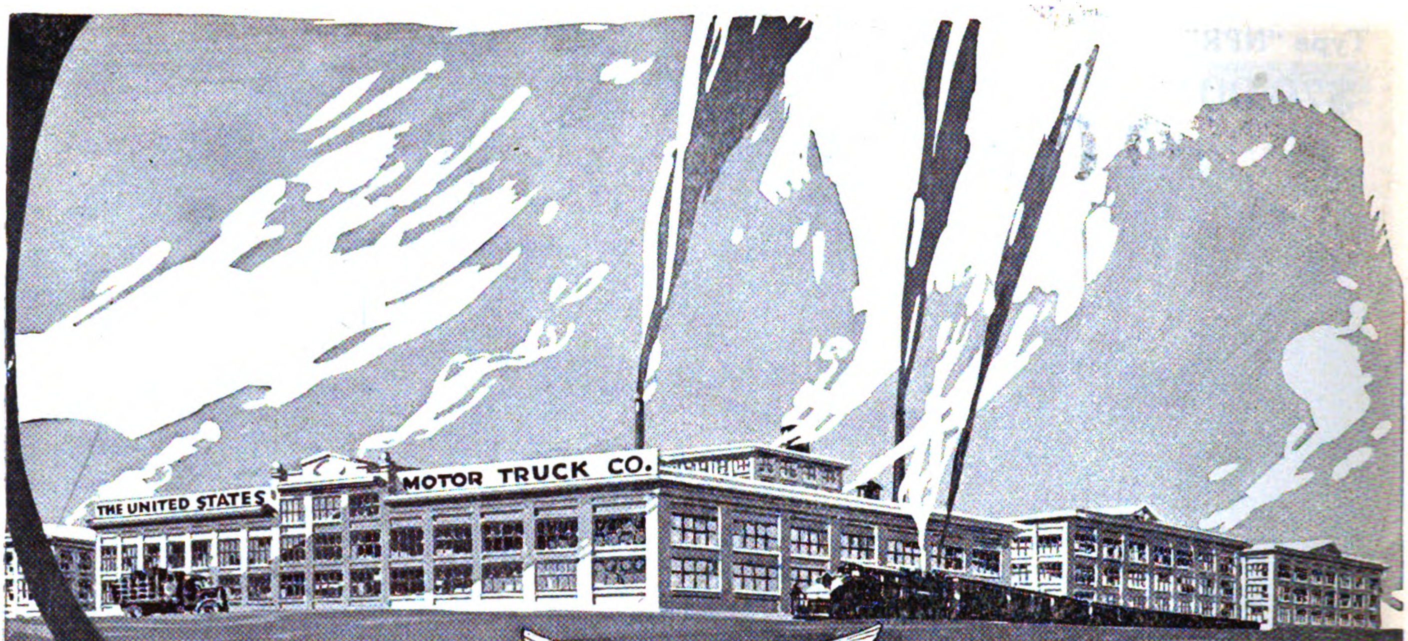
**C. A. Shaler Co., 250 Fourth Street, Waupun, Wis.**
***Oldest and Largest Manufacturers of Vulcanizers for Motorists and Repair Shops***

**Mail Coupon for Catalog**

C. A. SHALER COMPANY
250 Fourth Street, Waupun, Wisconsin

Gentlemen: Kindly send me at once a copy of your catalog describing the SHALER Vulcanizer for Garages and Repair Shops, and containing a copy of your "Money-Back" Guarantee.

*Name*........................................
*Address*........................................
*City and State*........................................


THE UNITED STATES MOTOR TRUCK CO.

U S
MOTOR FLOATING POWER PLANT TRUCKS

# Foresight
# Sell Motor Trucks
# *Pick the right Truck and "Win"*

The U. S. is the truck account of the hour.

Keep your business booming—Sell trucks and MORE TRUCKS as the enormous demand for wartime transportation increases.

You know the **BIG STIR** U. S. TRUCKS have made in the truck world.

The U. S. is a HIGH GRADE, HIGH QUALITY truck.

For nine years it has made GOOD.

Half of all U. S. Owners have placed repeat orders.

Built in the largest exclusive heavy duty truck factory in the country.

Backed by financial strength, harmonious organization and a strong co-operative policy.

The organization behind the U. S. is modern in spirit—it knows how to CO-OPERATE.

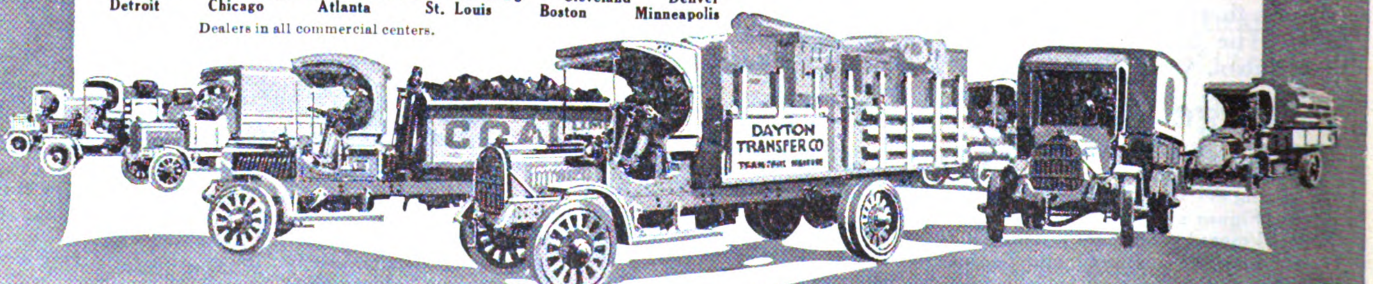
TODAY is the psychological time to THINK—THINK QUICK AND ACT. Don't let the other fellow beat you to it.

Get aboard immediately—AND WIN.

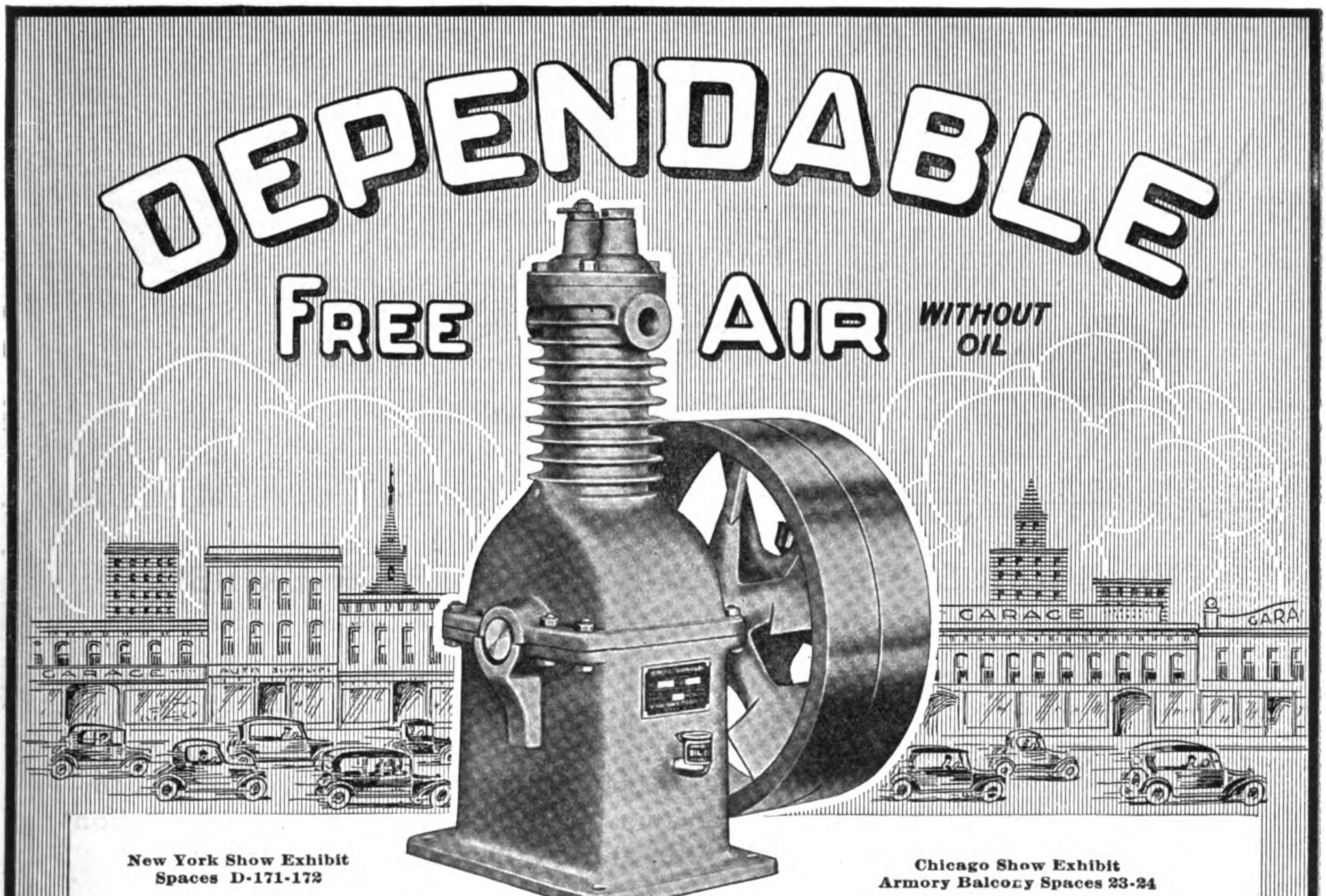
Are you the future U. S. Dealer in your town? Wire us your name today.

**THE UNITED STATES MOTOR TRUCK COMPANY**
**CINCINNATI, OHIO**

New York Detroit Philadelphia Chicago Baltimore Atlanta Pittsburg St. Louis Cleveland Boston Denver Minneapolis
Dealers in all commercial centers.



**U.S. MOTOR TRUCKS**



New York Show Exhibit
Spaces D-171-172

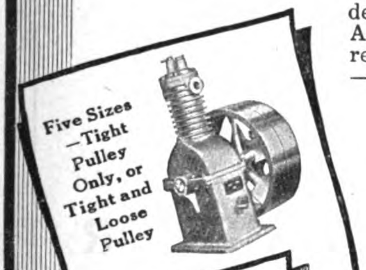
Chicago Show Exhibit
Armory Balcony Spaces 23-24

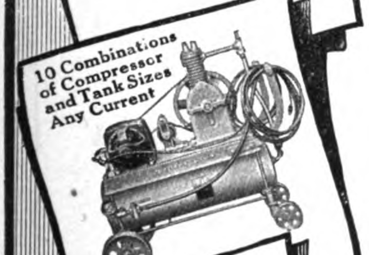
## Better Service Brings You More Trade

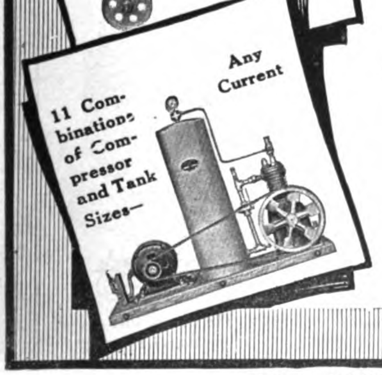
Auto owners have awakened to the fact that all Free Air Service is not alike. They are demanding PURE AIR for their tires because they have learned that oil rots tires and that AIR FREE FROM OIL means less blowouts, fewer punctures, greater tire mileage, less repairs and a great saving in up-keep every month. Cater to the demands of auto owners—give them what they want. Make your place the most popular in town by furnishing

## CURTIS AIR
## FREE FROM OIL

Curtis Compressors are the result of 25 years experience in the manufacture of high grade pneumatic machinery. They are reliable, dependable, require practically no attention, are economical to operate, guaranteed to stand up under the severest strains of hard usage and furnish a continuous supply of cool, pure, clean air. While others claim to furnish air free from oil, Curtis is the only Garage Air Compressor with the controlled splash oil system—our **own exclusive patented device** which prevents flooding the cylinder with more oil than it needs or can use—and eliminates all danger of forcing oil into the air line. Curtis Air is pure air—free from impurities—free from oil—the kind of air that makes tires last longer and pleases every patron.







## Curtis Compressors Pay For Themselves

They build business—hold your old trade—bring new patrons to your door—and by the superiority of your Free Air Service, create a feeling of confidence in the quality and reliability of your entire stock. And more than that—a Curtis Compressor will save you big money by supplying air for air hoists, painting, cleaning, vulcanizing, blowing dust and drillings from tools and serving you in many other ways.

## 5 Sizes—125 Combinations

There is a Curtis Compressor to meet the requirements of your business in every way—just the size, arrangement and price to please you. It will pay you to investigate. Ask your jobber—or cut out and mail us the attached coupon TODAY.

**Curtis Pneumatic Mach. Co.**

**1621 Kienlen Ave., St. Louis, Mo.**

Branch Office
531-A Hudson Terminal,
New York, City

**Curtis
Pneumatic
Machinery Co.**
1621 Kienlen Ave.
St. Louis, Mo.

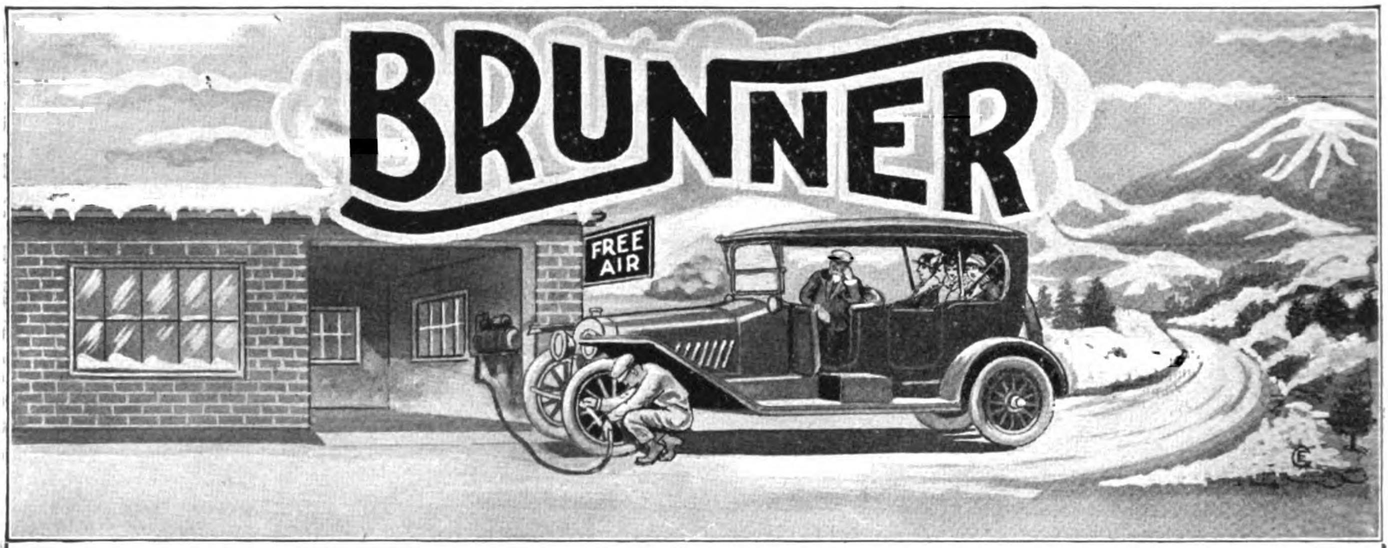
Gentlemen: Please send me full details on Curtis Air Compressors—your proposition and low prices.

Name..........................................................

Address..........................................................

Jobber's Name..........................................................

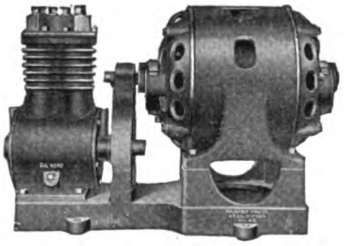
Address..........................................................



## THE BRUNNER GARAGE AIR COMPRESSOR EXHIBIT

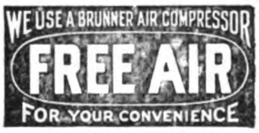
AT THE CHICAGO SHOW WILL OCCUPY SPACES Nos. 203, 204, 205, 206, 207 and 208.

A competent force of engineers and sales representatives will be in attendance to explain our line to the visiting Jobbers, Garagemen and Motorists, and whether or not you are selling or using Brunner equipment our representatives will be glad to assist you in solving your compressed air problems. We extend you a cordial invitation to visit our Exhibit at the Chicago Show.



We also wish to thank our friends who displayed so much interest in our exhibit at the New York Show.

*Proper tire inflation means more mileage and smoother riding—Brunner service insures proper tire inflation.*


WE USE A BRUNNER AIR COMPRESSOR
FREE AIR
FOR YOUR CONVENIENCE

*The Brunner Sign is a sure sign of prompt and efficient compressed air service—are you Brunnerwise?*

## INVESTIGATE THE BRUNNER AIR COMPRESSOR

Every Jobber, Garageman and Motorist who is not Brunnerwise should investigate the Brunner Garage Air Compressor—he should give the compressed air problem more thought—he should know just as much about the air that goes into the tire as he does about the oil that goes into the motor—it is just as important.

*Our new No. 15 Catalogue is ready for distribution—send for it today—and let us send you the name of the Brunner Jobber covering your town.*

The Brunnerwise Garageman

## BRUNNER MANUFACTURING COMPANY

Main Office and Plant:
UTICA, N. Y.

Cincinnati Branch:
CINCINNATI, OHIO

The Brunnerwise Motorist

# Dyneto

# LIGHT and POWER

## *Winter Business Means All Year Trade*

You know that the winter months make it hard sledding in the automobile game. The labor situation makes it necessary that you hold on to your working force. How can they earn their wages and make money for you?

This is the answer: Sell Dyneto Light and Power Plants in your community. Think of the many prospects within a few miles of you. They all want light and most of them have the purchasing power.

The Dyneto Light and Power Plant is easier to sell and offers more profit than a low priced automobile. Hundreds of garage men have adopted this plan of increasing their profits.

•

You will make many sales right in your garage. Your plant will pay for itself in lighting your garage and electric sign, running your air pump and lathe, or in charging batteries at a remarkably low cost. You can use it as a demonstrator to customers coming to your garage. But do not be content with that. Mount another plant on the back of an auto or on a trailer and send your men out after business.

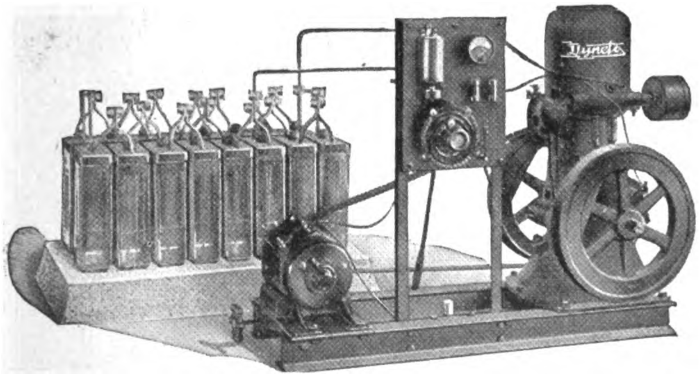
Dyneto Light-and-Power Plants consist of a gasoline engine (gas or kerosene, if preferred), generator, switchboard and standard 16-cell storage-battery outfit. The engine is self-starting from the battery. Belted to a line-shaft the engine furnishes power for pumping water, running separator, milking machine, churn and for other power duty, while charging the batteries for light at the same time.

The Dyneto Plant is simple, trouble-proof, easy to install and care for. It can be furnished without engine if your customer already has an engine.

Plan to increase your profits by going after this business good and hard. Write to us today about the necessary steps.

## DYNETO ELECTRIC CORPORATION

**SYRACUSE NEW YORK**



**DYNETO DOES DOUBLE DUTY**

**LIGHT AND POWER**

MEMBER
AUTOMOTIVE ELECTRIC ASSOCIATION
AEA

**Dyneto
Electric
Corporation**
**274 Wolf Street
SYRACUSE, N. Y.**

**Please outline your proposition on selling Dyneto Light and Power Plants in this community.**

Name........................

Address...........................

BEARINGS SERVICE COMPANY
JANUARY 1918
BEARINGS SERVICE EXHIBIT
AT THIS BRANCH
BEARINGS SERVICE COMPANY
997
BEARINGS SERVICE COMPANY
TIMKEN ROLLER BEARING CO.
HYATT ROLLER BEARING CO.
NEW DEPARTURE MFG. CO.
Bearings

## Bearings Service Exhibits in Twenty-two Cities

We're having an "Auto Show" all our own—and not merely one, but twenty-two of them—one at each of our twenty-two branches.

There's much of interest at these exhibits for every automobile dealer, garage-man and motorist. You'll find here for inspection, Timken, Hyatt and New Departure bearings of every size ever used in motor vehicles—besides valuable books and literature to assist you in getting a maximum of service out of the bearings in your own motor car.

These exhibits will continue during the entire month of January. Don't fail to attend the one at our branch nearest you—and get your souvenir.

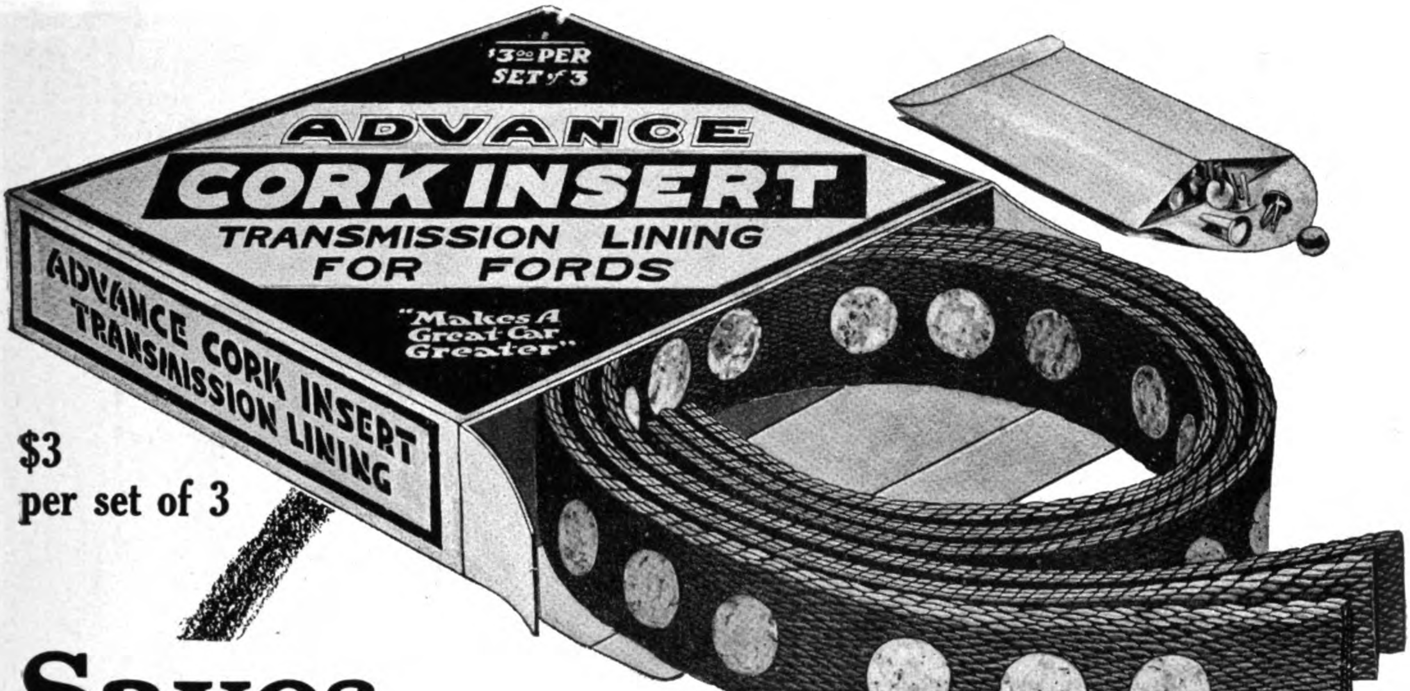
*Branches In These Cities*

**New York**
**Detroit**
**Chicago**
**Boston**
**San Francisco**
**Los Angeles**
**Atlanta**
**Seattle**
**Minneapolis**
**Kansas City**
**Dallas**
**Cleveland**
**Denver**
**Indianapolis**
**Philadelphia**
**St. Louis**
**New Orleans**
**Omaha**
**Pittsburg**
**Portland, Ore.**
**Toronto, Can.**
**Rochester**

# BEARINGS SERVICE COMPANY

General Offices

Detroit, Michigan



$3.00 PER SET of 3
ADVANCE
CORK INSERT
TRANSMISSION LINING FOR FORDS
"Makes A Great Car Greater"
ADVANCE CORK INSERT TRANSMISSION LINING

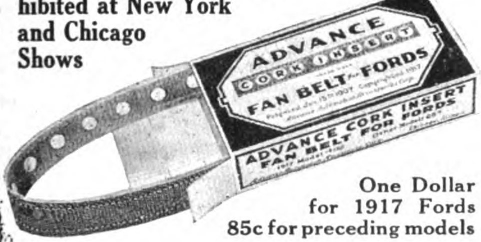
**$3**
**per set of 3**

# Saves Ford Rear End

Rear end trouble! That's a big bugaboo with Ford owners. One of the chief contributing causes is inefficient transmission lining. It gets hard and polished—then grabs and slips—and *then* there's *trouble to pay*. The Ford comes to a stop amid heavy vibration and noisy chattering. The back end vigorously jumps up and down. The *direct shock* of this vibration is communicated through the drive shaft and gearing to the rear axle. No mechanism can stand such strain indefinitely. Rear end trouble is the *natural result.* Cork Insert Transmission Linings stop the grab and slip—eliminate the chatter and permit velvety smooth transmission action. They *save* the Ford rear end—prolong greatly the life and efficiency of the car. This alone would make the use of these linings economical and advisable. In addition they outwear two to three sets of ordinary linings.

## A Non-Slip Fan Belt for Fords

**Cork Insert Products Exhibited at New York and Chicago Shows**



One Dollar
for 1917 Fords
85c for preceding models

Authorities say that up to 50% of the "drive" goes to waste from slippage in the ordinary Ford fan belt. It gets so hard and glassy that the fan speed is reduced, the engine is not properly cooled and overheats. Cork Insert Fan Belts do not slip—they keep the fan fanning, keep the engine cool, are very long lived and economical.

**Advance Automobile Accessories Corporation**
Dept. A3-1
56 East Randolph Street
Chicago

## Dealers:

Order Cork Insert Transmission Linings and Fan Belts from your jobber. Ask him how Cork Inserts are moving. He will tell you they are a BIG WINNER. Stock them — recommend them — push them. They will make you a lot of profit.

## Dealer's Coupon

Check and Mail today

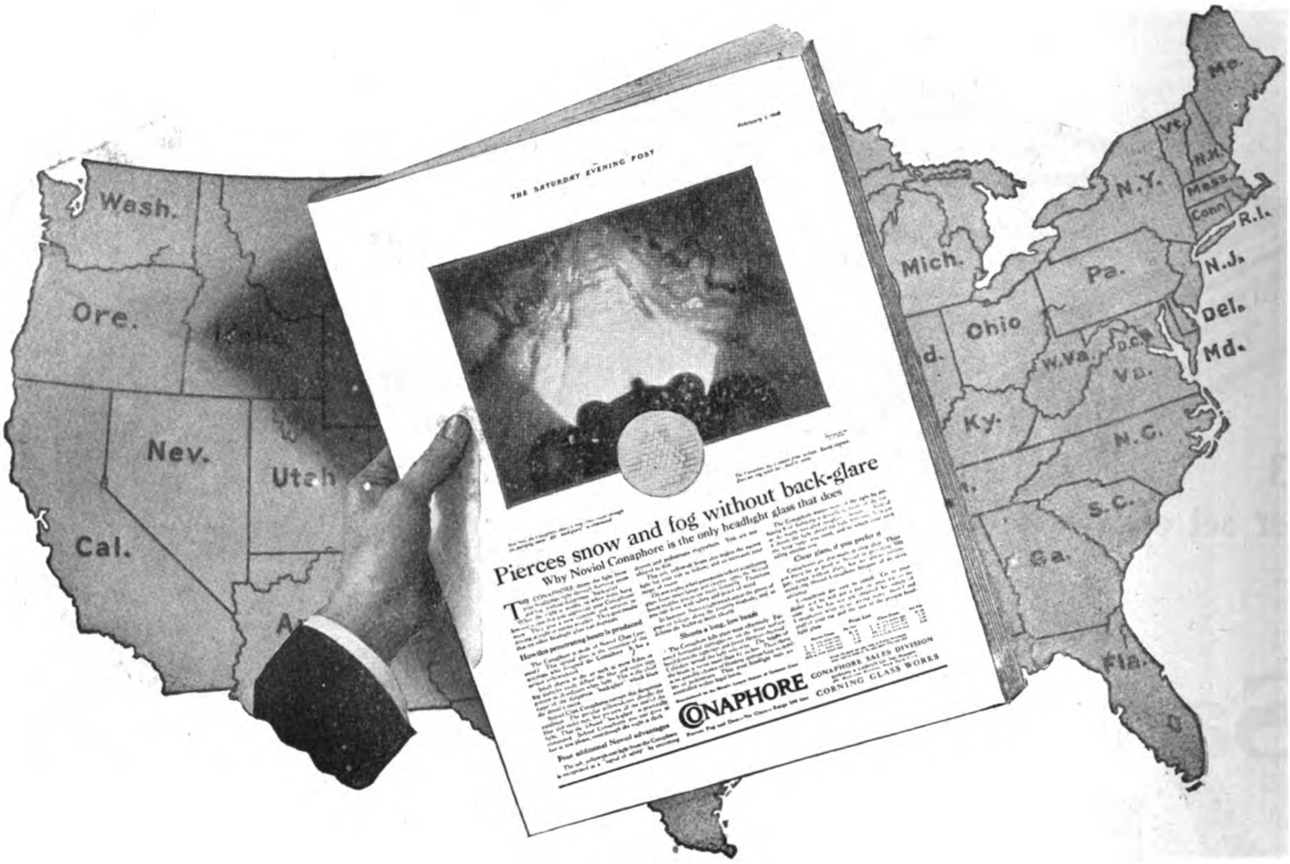
**Advance Automobile Accessories Corporation**
**Dept. A3-1 56 E. Randolph St., Chicago**

☐ Send one dozen sets of Advance Cork Insert Transmission Linings for Fords.
☐ Send one dozen Advance Cork Insert Fan Belts, 1917 Ford.
☐ Send one dozen Advance Cork Insert Fan Belts, 1916 or earlier model Ford.
(Regular dealer discounts to apply.)

Name ..........................................

City .......................... State ..........

Jobber's Name ..........................................



# Tie up your business to this nation-wide advertising

## *How you can make extra good profits on Conaphores in 1918*

The 1918 Conaphore campaign in the leading magazines and farm papers is the strongest ever put behind an automobile headlight glass. The publications used by Conaphore have a total circulation of more than 7,000,000. A strong, educational message on the efficiency of Conaphores will reach more than 28,000,000 readers regularly.

Tie up to it!

Focus this nation-wide campaign on your own business. Direct the demand straight to your counters. Get your full share of Conaphore profits!

### Trade aid

Put the Conaphore sales-helps behind your own sales efforts, and you will get the major portion of the headlight business in your territory. We supply the following items without charge:

**Order getting consumers' booklet**—Two color, envelope-size folder telling the complete Conaphore story. A great business getter when sent out with your mail or passed out over your counters. Ample space for your own signature.

**Attractive window transparency**—Two color poster, 14 inches wide. Marks your store as a Conaphore sales-depot. This design also available as a store or counter card—even a billboard poster.

TOP
CORNING CONAPHORE

**The Conaphore**

*Smooth front surface. Easily cleaned. Does not clog with dust, mud or snow*

*Manufactured by the world's largest makers of technical glass*

**CONAPHORE**

**No glare—Range 500 feet—Pierces fog and dust**

**1918 wall chart**—Combination sales-poster and chart of headlight sizes for different makes of cars. Has strong attention-getting value, and delivers a real sales-punch. Should be on every dealer's wall.

**Set of newspaper electros**—A series of six newspaper ads, suitable to run in your regular space. Furnished complete, with plenty of room for your own signature.

Consistent use of these trade helps will keep the fact that you sell Conaphores constantly before the motorists of your territory. It will help you cash-in on our national advertising.

**Jobbers**—Write us for the Conaphore proposition—it is sure to interest you.

**Dealers**—Write your jobber, or direct to us, for full particulars on the Conaphore.

If you attend the Chicago Show be sure to call on us at Booths 167-173, inclusive, Coliseum Annex. We will be glad to talk business in terms you will readily understand.

| Retail Price List (Per Pair) | Noviol Glass | Clear Glass |
|---|---|---|
| 5 to 6⅞ inches incl. | $2.40 | $1.60 |
| 7 to 8½ inches incl. | 3.50 | 2.50 |
| 8⅝ to 10 inches incl. | 4.50 | 3.00 |
| 10⅛ to 11½ inches incl. | 6.00 | 4.00 |

Prices 25 cents more per pair west of Rocky Mountains. Sizes vary by steps of ⅛-inch above 6½-inch size.

CONAPHORE SALES DIVISION
Edward A. Cassidy Co., Inc., Managers
Madison Ave., and 40th St., N. Y. C.
CORNING GLASS WORKS

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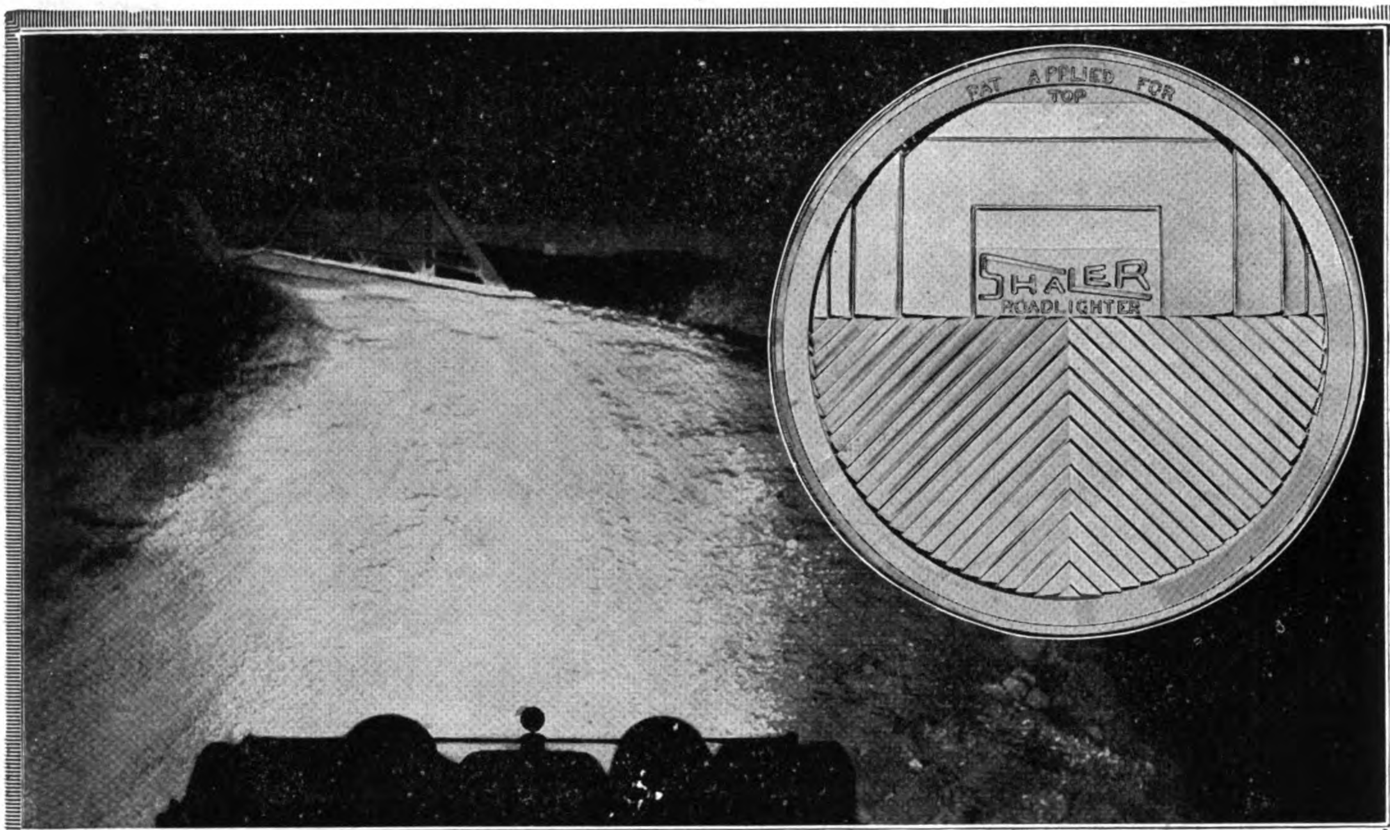


*Unretouched Midnight Photograph by Fowler, Evanston, Ill.*

# The Perfect Light for Night Driving

It solves the *glare* problem, because it has no glare—absolutely none—but what is more important, it makes night driving *safe* and enjoyable—it obviates the need of dimmers, spotlights, auxiliary headlights and high candle power bulbs which drain the batteries and impair ignition.

You can now drive at night—just as safely—just as fast as in daytime—without constant fear of danger, without stopping and dimming your headlights to allow another car to pass. The SHALER Roadlighter lights the *entire* road—from fence to fence—with a bright, white, evenly distributed light.

The SHALER Roadlighter has been subjected to the most rigid tests by illuminating experts.

*State, city and police officials have given this remarkable lens their approval*—acccident insurance companies endorse and recommend it.

We have tested it so thoroughly—that we absolutely guarantee every pair of SHALER Roadlighters.

# SHALER ROADLIGHTER

*Pierces the Glare of Approaching Headlights*
*Illuminates the Ditches*
*Accurate Focusing Unnecessary*
*Easy to Keep Clean*

*Shoots the Light Far Ahead*
*Legal Everywhere*
*Rays Penetrate Fog and Dust*
*Easy to Install*

## Limited Offer to Dealers Only

We want every automobile accessory dealer in the United States to try out a pair of SHALER Roadlighters on his own car—AT OUR EXPENSE.

Mail the coupon for full particulars regarding this big offer. There is no obligation—don't put it off—clip and mail coupon *now*.

**C. A. Shaler Company**
**9250 Fourth St. Waupun, Wis.**

## Dealers' Offer Coupon

**C. A. SHALER CO., 9250 Fourth St., Waupun, Wis.**

Gentlemen: Send me full particulars about your offer to let dealers try out a pair of SHALER Roadlighters at your expense. This obligates me in no way.

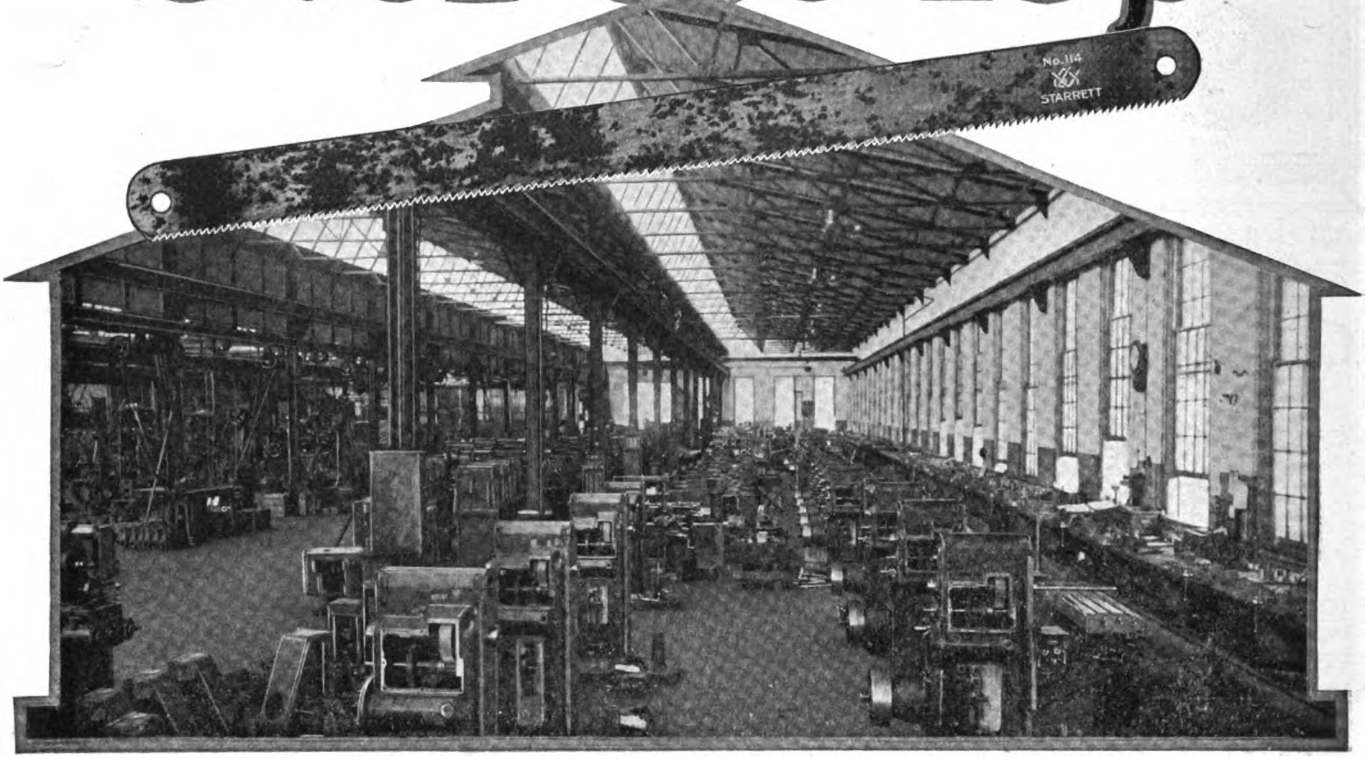
*Name*..............................................................................

*Address*..............................................................................

*City and State*..............................................................................

*My Jobber's Name Is*..............................................................................

# "Over the Top"



RIGHT down in the front trenches of metal working, in the no man's land of production

## Starrett Hack Saws

are doing their bit. The sharp, hardened tungsten steel teeth cut their way through rod or sheet, steel or copper, as a machine gun cuts its way through opposing infantry.

While the excellence of Starrett blades has long been an accepted fact, never before have they been accorded the confidence they enjoy today. The rush and bustle attendant upon forced production have created a demand for a hack saw blade that will "stand up"—cut quicker and last longer.

Because we have made careful and thorough tests we are able to tell you just which numbered blade is best suited for each class of work. The result of these important tests together with the unexcelled quality of Starrett Hack Saws have placed our blades in the front rank of industrial preparation.

***What blade to use is indicated on page 208 of our catalog No. 21 GT. Send for your copy.***

STARRETT
HACK SAWS
CUT QUICKER
LAST LONGER

**The L. S. Starrett Co.**
The World's Greatest Toolmakers
ATHOL, MASS.
NEW YORK LONDON CHICAGO

42-749

The ACCESSORY and GARAGE JOURNAL
Devoted Exclusively to the Automobile Trade and Allied Interests.

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# Great Gathering of Dealers at Chicago Show

## National Exhibition at Coliseum and Armory Has 400 Models on Display and 258 Accessory Exhibits—Several New Creations Among Ninety-Two Makes of Cars That Were Not Shown in New York—Many Business Conventions Held

THE National Automobile Show at Chicago, in the Coliseum and First Regiment Armory, opens with every prospect of living up to the reputation it has earned in the past of being the greatest dealers' show in the world. Being held in what is practically the geographical business centre of the country, it is conveniently located for the attendance of the dealers from everywhere and this fact has brought the show to the front as the mecca for thousands of men in the motor car and accessory trade.

This year finds no exception to the rule both as regards the gathering of dealers, as well as representatives of the various branches of the motor car industry, owing to the unusual conditions prevailing. In point of interest the show is also of as great importance as that recently held in New York. There are 92 makes of cars on exhibition, including several that were not shown in New York, and nearly 20 accessory exhibitors who were not in the Grand Central Palace exhibition. There are 400 car models displayed and 258 accessory exhibits.

Of numerous meetings held throughout the week a most important one is the war dinner of the Society of Automotive Engineers, which brings together many of the country's foremost engineers, many of whom are now engaged in war work for the government. Of interest also are the many dealers' conventions, held under the auspices of the manufacturers and attended by their dealers and distributors from all parts of the country. Among the most prominent gatherings of this kind may be mentioned the Maibohm Motors Co., Dodge Bros., Franklin Automobile Co., Velie Motors Corp., Paige-Detroit Motor Car Co., Maxwell Motor Sales Co., Hupp Motor Car Corp., Vesta Accumulator Co. and the C. A. Shaler Co. A large attendance of garage owners at the show comes in connection with the annual convention in the city of the Garage Owners' Association of Illinois.

### CARS ON EXHIBITION

### SIX-CYLINDER CARS.

Anderson
Auburn
Buick
Case
Comet
Chalmers
Chandler
Columbia
Davis
Dorris
Elgin
Elcar
Empire
Franklin
Glide
Grant
Haynes
Hollier
Hudson
Jordan
KisselKar
Liberty
Lexington
Marmon
McFarland
Mitchell
Moon
Nash
National
Oakland
Overland
Owen
Paige
Pan-American
Paterson
Pierce-Arrow
Premier
Reo
Roamer
Saxon
Stephens
Studebaker
Velie
Westcott
Winton

### FOUR-CYLINDER CARS.

Allen
Briscoe
Buick
Case
Chevrolet
Crow-Elkhart
Dixie Flyer
Dodge
Dort
Elcar
Empire
Fiat
Hackett
Harroun
Hupmobile
Inter-State
Maibohm
Maxwell
Mercer
Moline-Knight
Monitor
Monroe
Moore
Olympian
Overland
Reo
Saxon
Stutz
Studebaker
Stearns
Templar
Woods

### EIGHT-CYLINDER CARS.

Apperson
Cadillac
Chevrolet
Cole
Hollier
King
Oldsmobile
Peerless
Scripps-Booth
Standard
Stearns
Willys-Knight

### 12-CYLINDER CARS.

Austin
Haynes
Hal
KisselKar
National
Packard

### ELECTRIC CARS.

Detroit
Milburn
R. & L.
Ohio

### STEAM CARS.

Doble-Detroit
Stanley

As a business show Chicago established its supremacy some years ago owing to the actual contracts running into millions of dollars which are placed annually by dealers and agents. A great volume of business incident to the show this year comes particularly on the accessory end, as there are present approximately 5,000,000 cars registered in the country, all of which will continue in operation in all probability, assurance having been given out by the officials of the petroleum committee of the War Board that there was no prospect of any gasoline shortage.

This is an increase of nearly a million cars as compared with a year ago and should indicate an equal increase in the demand and consumption of motor car accessories and equipment.

In addition to the Comet, Pan-American and Maibohm, the three cars on exhibition were not shown in New York, the Deering-Magnetic, a new car employing the Entz system of electrical transmission, attracts much attention at the Automobile Salon, Inc., in the Elizabeth room of the Congress Hotel.

There have been a large number of additions to the list of accessory exhibitors as originally published, which includes the following firms: Air Device Co., Chicago; F. A. Ames Co., Owensboro, Ky.; Anderson Forge and Machine Co., Detroit, Mich.; Auto Pedal Pump Sales Corp., 456 Fourth Ave., New York; Bay State Pump Co., Boston; Carburetor Mantle Co., Inc., 1476 Broadway, New York; Copeman Laboratories, Inc., Flint, Mich.; G. L. W. Spring Oiler Co., San Diego, Cal.; Gibraltar Jack Co., 1902 Broadway, New York; Guaranteed Liquid Measure Co., Pittsburgh, Pa.; McCord Manufacturing Co., Detroit; Menominee Electric Products Co., 1756 Broadway, New York; Miller Transmission Co., 90 West St., New York; New Era Spring and Specialty Co., Grand Rapids, Mich.; Wm. E. Pratt Manufacturing Co., Chicago; Rajah Auto Supply Co., Bloomfield, N. J.; Rand Manufacturing Co., Haverhill, Mass.; Rex Manufacturing Co., Connersville, Ind.; Taft-Pierce Manufacturing Co., Woonsocket, R. I.; C. R. Wilson Body Co., Detroit, Mich.; Wire Wheel Corporation of America, Buffalo, N. Y.; Woodworth Manufacturing Co., Niagara Falls, N. Y.

# JOBBERS FAVOR PRACTICAL HELPS

## Discard "Pleasure" Car and Discontinue the Distribution of the Annual Jobber's List

S. F. Beach of the Motor Car Supply Co., Chicago, was elected president of the National Association of Automobile Accessory Jobbers at the annual meeting of that organization held in New York. He succeeds Charles E. Faeth. His election was a popular one, as he was not only one of the founders of the association, but one of the most active members in promoting its welfare and growth to its present proportions.

The other officers elected were: Vice president, P. H. Lyon, Chanselor & Lyon Co., San Francisco, Cal.; chairman of board of directors, R. R. Englehart, Siego Co., Davenport, Ia.; vice chairman, William Sparks, Sparks-Withington Co., Jackson, Mich.; directors for one year, W. W. Low, Electric Appliance Co., Chicago; G. N. Schafer, Pruden Hardware Co., New York; F. B. Caswell, Champion Spark Plug Co., Toledo, O.; C. E. Jackson, Jackson Motor Supply Co., Pittsburgh, Pa.; G. M. McWilliams, Hyslop Bros., Toronto; E. C. Graham, National Electric Supply Co., Washington; directors for two years, W. D. Alexander, Alexander-Seewald Co., Atlanta, Ga.; C. F. Wright, Ballou & Wright, Portland, Ore.; P. H. Lyon, Chanselor & Lyon Co., San Francisco; Wm. K. Norris, McQuay-Norris Mfg. Co., St. Louis; S. F. Beach and R. R. Englehart; new directors, S. F. Proctor, Minneapolis Iron Store Co., Minneapolis; S. T. McCullom, Auto Equipment Co., Denver, Col.; Frank T. Chase, Frank Mossberg Co., Attleboro, Mass.; W. T. Walker, Walker Mfg. Co., Racine, Wis.; L. P. Halladay, L. P. Halladay Co., Streator, Ill.; F. A. Ferris, Ferris-Dunlap Auto Supply Co., Dallas.

A committee on Federal Relations was appointed as follows: William Sparks, Charles E. Faeth and S. F. Beach

There were 19 new members elected as follows: Duluth Auto Supply Co., Duluth, Minn.; Downing Electric Co., Des Moines, Ia.; Henderson Auto Supply Co., Youngstown, O.; H. T. Dils & Son Co., Parkersburg, W. Va.; Wisconsin Auto Supply Co., Warsaw, Wis.; Elin Auto Supply Co., Newark, N. J.; T. T. Hutchison Co., Wheeling, W. Va.; Michael Ert, Winnipeg; Northern Electric Co., Montreal; Albertson & Co., Sioux City, Ia.; Hawthorne Mfg. Co., Bridgeport, Conn.; Prescott Auto Parts Co., Worcester, Mass.; W. C. Wood Co, Minneapolis, Minn.; Allen Auto Specialty Co., New York City; Phillips-Brinton Co., Kennett Square, Pa.; A. J. Stephens Rubber Co., Kansas City, Kan.; Van Sicklen Co., Elgin, Ill.; Advance Auto Accessories Corp., Chicago; Motor Parts Co., Philadelphia.

Many subjects came up for consideration at the meeting, including trade acceptances, cost and overhead, "overlapping" territories and dealer betterments. It was also decided to discontinue the distribution of the jobbers' list.

George Fritz, field secretary of the association, in speaking on the question of dealer betterments, said:

"When you all go back home do not permit your good intentions to be moss-ridden, but strain all efforts to put into effect state dealer's associations and immediately start a personal campaign to educate and keep in line the dealers so that they may be able to do a profitable accessory business.

"For this purpose I would suggest the employment of a practical man who will call upon the dealer periodically and who will demonstrate to the dealers the best way to do efficient work. Being that this man represents the dealers' association, he is neutral, and, therefore, the element of selfish motive is eliminated.

A resolution was introduced by E. A. Cassidy of New York that the organization in all its literature cease using the expression "pleasure car" when referring to an automobile and in its place employ the word "passenger" or "commercial" with reference to a passenger car or truck respectively. The resolution was unanimously adopted.

# *Plenty of Gasoline For Use In U. S.*

### Chairman of Petroleum Committee Gives Out Reassuring Statement on Fuel.

A. C. Bedford, chairman of the Petroleum War Service Committee, following a meeting of that body held early in the month, gave out a statement in which he declared that there was no shortage of gasoline for use in this country.

### M. A. M. A. ANNUAL BANQUET AND ELECTION OF OFFICERS.

Over 500 members attended the annual banquet of the Motor and Accessory Manufacturers' Association, held in New York, on Jan. 9. President Charles W. Stiger delivered an address of welcome, which was followed by an entertainment, including a talk by Corporal R. Derby Holmes of Boston, who described his experiments in France while a member of a Canadian regiment.

At the annual meeting of the organization four retiring directors were elected. They are: Christian Girl, Standard Parts Co., Cleveland, O.; E. H. Broadwell, Fisk Rubber Co., Chicopee Falls, Mass.; E. W. Beach, Manufacturers' Foundry Co., Waterbury, Conn.; L. M. Wainwright, Diamond Chain and Manufacturing Co., Indianapolis, Ind. The board of officers was re-elected as follows: President, C. W. Stiger, Stromberg Motor Devices Co., Chicago; first vice president, C. E. Thompson, Steel Products Co., Cleveland; second vice president, E. H. Broadwell, Fisk Rubber Co.; third vice president, T. J. Wetzel, Precision Die and Casting Co.; treasurer, L. M. Wainwright, Diamond Chain and Manufacturing Co.; assistant treasurer and secretary, W. O. Rutherford, B. F. Goodrich Co. Mr. Sloan, who was formerly assistant treasurer, continues as a member of the board of directors.

### W. E. YALE MICHIGAN FRUEHAUF DISTRIBUTOR.

W. E. Yale, formerly of the Studebaker and Overland companies, has been appointed Michigan distributor for the Fruehauf Trailer Co. of Detroit, manufacturers of Fruehauf trailers.

In entering the trailer business Mr. Yale, who is one of most successful automobile salesmen in the West, says that his decision to change into that branch of the industry was influenced by a study of transportation problems, which convinced him that the trailer business is destined to rival even the motor truck business in importance.

"War time transportation problems that have arisen during the past year," says Mr. Yale, "have proven conclusively the advantages of the trailer. Many concerns that were formerly depending upon motor trucks alone for their transportation have found that by the addition of a few inexpensive trailers they have been able to double their delivery capacity without the purchase of additional truck equipment."

### COMMODORE GARAGE OPEN.

The Commodore Realty Co., Inc., is opening its palatial new garage on East 43d street, between Second and Third avenues, New York City, on Feb. 1. The spacious building has latest improvements, including Otis elevator, a roof garden and ventilating ducts on each floor, as well as distinctive service features.

### A. H. SOWERS WILL HANDLE FULTON IN NEW ENGLAND.

The entire New England territory for the Fulton truck has been taken over by A. H. Sowers, treasurer of the Jackson Motor Car Co. of New England. He has already closed agencies for the Fulton at Worcester, Springfield, Brockton, Haverhill, Lawrence and Fall River.

### RUSSEL AXLE ISSUES MAP OF BATTLE FRONT.

The Russel Motor Axle Co., Detroit, Mich., has issued a neat folder in the form of a map of the battle front in France and Belgium showing the old and new battle lines. It is a very complete map and shows the names of places, waterways, forests and elevations.

**Grand Entrance of the Grand Central Palace Decorated with Flags for the First War Time Show, the Great Mural Painting, "The Hour of Deliverance," in the Background.**

# *Accessories Feature of Big New York Show*

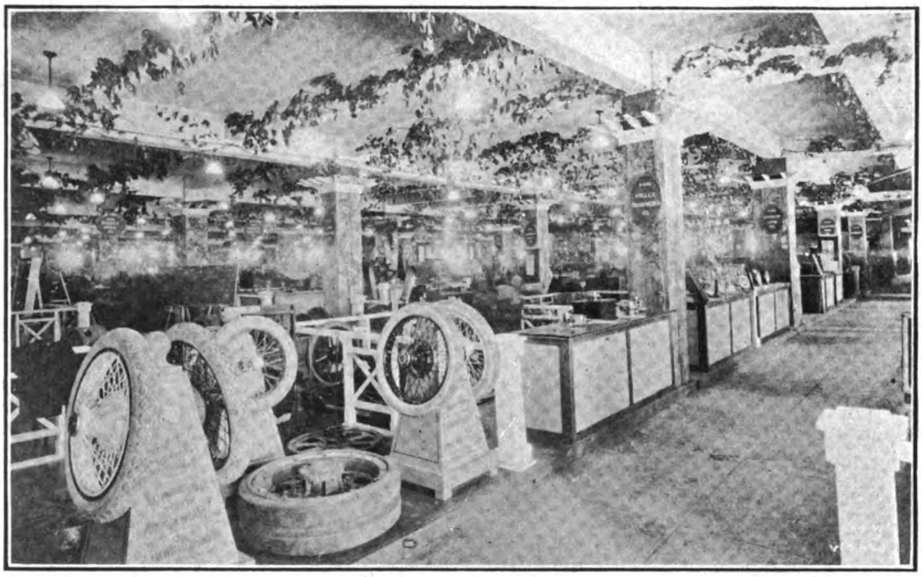
## More Elaborate and Greatly Enlarged Displays Taken as Indication That 1918 Will Be One of the Biggest Years For Accessory Men

ASIDE from the several new cars that were among the exhibits of automobiles at the National Automobile Show in New York, the real feature was found in the accessory exhibits, which were more numerous and interesting than ever before. In fact, the show brought out plainly the fact that the current year would be one in which the accessory business would assume greater importance than in the past, owing to the influence on the trade of various factors in the war situation. Another fact that was strongly evinced from the display was that the accessory trade and manufacturers were working along lines of utility in so far as the purposes of their products are concerned. On every hand it was noticeable that instead of freakish devices and things otherwise of doubtful utility, exhibitors showed articles designed to increase the utility of the car and make it more economical of operation, either through effecting greater engine efficiency or by prolonging its life.

Of the several new cars seen at the show, including the Olympian, Templar and new Overland, the latter proved the all absorbing feature, owing to the radical nature of its design shown in a unique system of spring suspension. The frame is made of channel steel, the two side members of which drop slightly in front and rear and come together at the ends. Semi-cantilever type of springs are shackled onto the part where the ends meet and extend back to the spring saddles on the axles. While the wheelbase of the car is but 100 inches, it is claimed that through the special type of suspension the same riding qualities are obtained as could be secured by the use of a much longer wheelbase. It is stated that the Willys-Overland engineers have been working on the new model for several years and that it will be on the market in quantities. No official statement has been made regarding the price of the car, but it is understood that it will sell for less than $500. In appearance it differs somewhat from the other Overland types, owing to the distinctive lines resulting from the suspension system, but the familiar Overland lines are recognizable on the radiator hood and cowl. The body is of streamline design wih removable upholstery.

The power plant is a 3½x4 four-cylinder engine, with a three-speed sliding gear transmission and conventional clutch. The engine reaches the peak of its power curve at 2000 revolutions per minute, at which speed it is said to develop 52 per cent. more power than the Ford engine, which reaches the peak of its power curve at 1300 revolutions per minute. Equipment includes a complete electric system and Auto-Lite starting and lighting outfit and U. S. L., Gould or Willard battery equipment. The generator is mounted on the right side of the engine and is driven directly from the timing set, and the starting motor is on the left side of the engine and engages the flywheel through a Bendix drive.

There was another new car which drew considerable attention during show week, although it was not on exhibition at the show. It was the new creation of Arthur Holmes of the Holmes Automobile Co., Canton, O. Mr. Holmes was formerly vice president of the Franklin Automobile Co. of Syracuse, N. Y., and it is natural that his product should be distinguished through virtue of the air-cooled principle upon which it operates. The Holmes line, which was shown at 52 Vanderbilt avenue, is the only air-cooled car in the field aside from the Franklin. The company has a factory with 175,000 feet of floor space and plans



The Accessory Floors at the New York Show Were a Bigger Feature Than Ever, Having More Exhibitors and Attracting Greatest Interest.

the manufacture of 4000 cars during the current year.

A more elaborate exhibit of accessories was made than at any previous show and many new devices were brought out, including thermostatic controls of radiator shutters, heating devices for preheating the gasoline mixture and other equipment tending to increase the efficiency of the engine by either governing the temperature of the cooling circulation or by improving the carburetion. There were 260 different accessory companies exhibiting and most of the third floor of the Grand Central Palace and all of the fourth floor was occupied by their exhibits.

Two conspicuous exhibits were those of the American Sleeve Valve Motor Co. and the Universal Auto Body Co. The former company exhibited its new sleeve valve engine, which presents the latest feature of a radical design in motors. It differs from the well known Knight type of engine in that the sleeves, instead of rising and falling for intake and exhaust through the ports, revolve around the cylinder axis basis inside the cylinder and around the pistons. They are driven by spiral gears on a shaft engaged with a crankshaft gear and produce practically no vibration even when the engine is driven at high speed.

The Universal Auto Body Co. showed its combination body, which can be manipulated into a two-passenger coupe, sedan, brougham or two or four-passenger roadster type. It is not freakish in construction, but closely resembles the permanent type of body that it is arranged to represent in any of the types mentioned.

As in years past the Automobile Salon at the Hotel Astor during the week was characterized by the luxurious body styles shown. There were, however, less freakish or extreme types shown than at previous salons. The most striking body shown was an individual creation on a special four-passenger Murray car, which was made to order for a prominent motorist. The body is of aluminum, with sharp angular lines throughout, even the mudguards being carried over the wheels semi-hexagonal in shape. Its appearance was also greatly enhanced by the high polish of the metal body and the use of steel disc wheels. A Fageol with a Hall-Scott aviation engine at $13,000 was the highest priced car in the salon. A new car, the Mercury, made by the Mercury Cars, Inc., made its debut at the Astor.

## S. K. F. BEARINGS AT KANSAS CITY TRACTOR SHOW.

The S. K. F. Ball Bearing Co., Hartford, Conn., will exhibit the S. K. F. radial and thrust ball bearings as applied to tractors at the Kansas City Tractor Show. The models on which the bearings are to be exhibited will show them in motion to call attention to the exclusive features of the S. K. F. bearings. The company's headquarters will be at the Hotel Biltmore during the show. Robert C. Byler, assistant advertising manager of the company, will be in charge of the exhibit and will be accompanied by the following representatives: Vice President S. B. Taylor; manager of the automotive department, C. R. Mabley; sales engineer, J. B. Castino; sales engineer, F. J. Rider; sales engineer, J. C. Long; sales engineer, C. C. Walsh, and sales engineer, A. J. Gillespie.

## LOUISVILLE SURPLUS POWER FOR MANUFACTURING WORK.

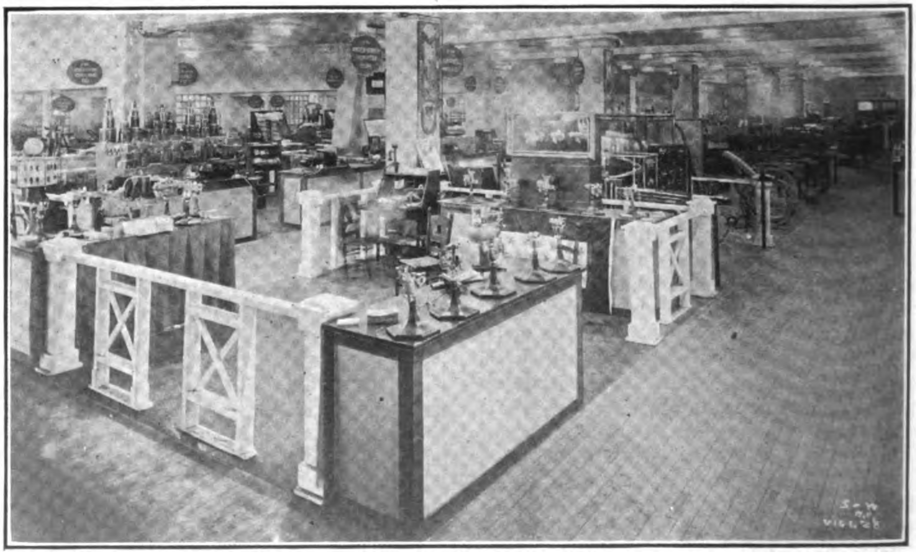
The Louisville Industrial Foundation, Louisville, Ky., which promotes the interests of that city as a manufacturing city. has sent out an announcement concerning its advantages in which it is stated that the Louisville central station has more than 10,000 K. W. surplus electric power for industrial purposes. This condition, the circular states, is due to the fact that the central station owns the mine from which it draws its coal supply and owns its coal cars. Its coal mine is just a night's run from Louisville. It also states that Louisville can supply a considerable area of floor space for manufacturing purposes.

## WINDOW DISPLAYS OF THE PEERLESS SPECIALTIES READY.

The Columbus Varnish Co., Columbus, O., makers of the "Peerless" line of automobile specialties, have announced to the trade that their 1918 window display material, containing six pieces to the set, such as signs, hangers and streamers, is ready for distribution to accessory jobbers, dealers and garages, as well as hardware stores. This material, which is free to all dealers carrying the "Peerless" line, will be sent upon request to those who have not received it.

## Y. F. STEWART SALES DIRECTOR.

Y. F. Stewart of Cleveland, O., well known in the sales end of the motor car industry, has been appointed director of sales of the Economy Motor Co. of Tiffin, O.



Accessory Exhibits Arranged on the Third Floor of the Palace, New York National Automobile Show.

# CASSIDY BOOMING PARTS SALES

## Young and Vigorous Merchandising Organization Scores Unique Success in the Accessory Field

THE extensive prestige enjoyed in the automobile industry by the E. A. Cassidy Co., Inc., of New York, big accessories and parts merchandisers, is well shown when the second anniversary of the foundation of the company finds them in charge of the sales of several of the leading factories producing automobile accessories in America. This company is the only one of its kind in the country and to the thoroughgoing organization which Mr. Cassidy has built up and energized is due the splendid reputation and prominent place won by it in the automobile accessory field.

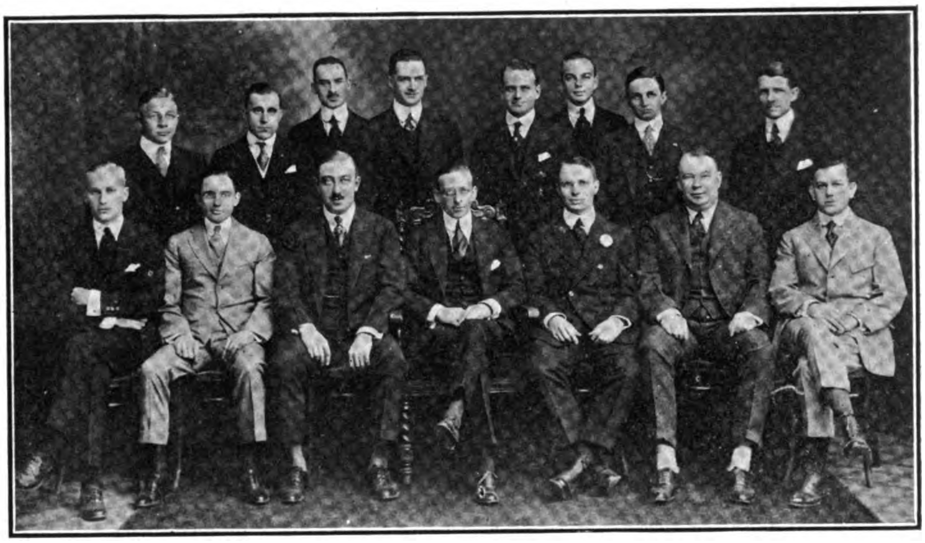
The company operates scientific selling campaigns with a vigor and success which makes a marked impress throughout the whole field from factory to consumer. Its talents are therefore exerted to a most appreciable extent in behalf of the accessory dealer and garage man. These effects are certain as the application of the company's expert methods to lines among the best known in the automobile field attest. The company acts purely in the capacity of sales department for their factories. In this work the Cassidy organization takes care of the entire output of the Corning Glass Works, manufacturers of Conaphores, Du Bois Piston Ring Co., makers of the Tenion Ring; Rajah Auto Supply Co., manufacturers of Rajah Spark Plugs and Rajah Spark Plug Terminals, West Side Foundry Co., experts in the manufacture of Cassco Engine Driven Tire Pumps; Auto Pedal Co., which makes Twombly Tire Foot Pumps; F. W. Mann Co., manufacturers of the Kimball Ball Bearing Auto Jack, and the G. Piel Co., which produces the G-P Muffler Cutout, the Long Horn, which is standard equipment on many makes of trucks, and the G-P Pedal.

The Cassidy Co. is actually the sales department of these various manufacturers. The company has absolute charge of the selling policy, advertising and everything connected with the selling of the products of the same as if its office and operating centre was located directly at the factory.

The conception of this unique enterprise came to Mr. Cassidy when he was automobile accessory manager for the H. W. Johns-Manville Co. He saw the possibilities of scientifically organized selling in the accessory field and set about the construction of his organization with keen judgment and characteristic energy. With the formation of a company to act as the sales department for various manufacturers, he immediately gathered around him an organization of men well known in the trade and put into practise the methods which have crystalized into the Cassidy accessories sales plan.

The method of selling is as follows:

The entire United States is allotted to district managers, there being 16 representatives in all. These representatives travel from their respective headquarters, calling on jobbers and dealers throughout their entire territory. The force is kept thoroughly alive to every turn in production, shipping facilities and improvement of the product by a special factory equipment man, Mr. C. P. Brewster, whose headquarters are in Detroit.



**Executive and Sales Staff of E. A. Cassidy Co., Inc. Top Row, Left to Right—E. H. Vogt, E. C. Wright, F. W. Carry, J. K. Gilchrist, A. O. Perlitz, J. Klag, H. S. Lyman, C. F. Conn. Sitting, Left to Right—Advertising Manager, L. M. Lloyd; C. P. Brewster, Secretary G. B. Gosman, President E. A. Cassidy, R. H. Sleicher, R. G. Ames, A. L. Martin. Gregory Flynn, Formerly Sales Manager of the Rajah Company; Frank Collins and E. P. Hoyle Joined the Company's Staff Since the Above Photograph Was Taken.**

Each one of the products handled by the Cassidy Co. are nationally advertised in the automobile trade, hardware and other publications. This plan is carried out in the firm belief that it assists salesmanship in pulling the goods off the shelves and comprises a feature of Cassidy service no less distinctive than the original distribution of goods from factory into the seller's hands. The Cassidy plan takes a thorough interest in the creation and maintenance of a consumer demand and publicity is the logical force with which it secures this effect with great success. In the pursuance of its method of sales the Cassidy organization sells only to the jobber, arranging that all orders or inquiries received from dealers and consumers are immediately turned over to the jobber in whose territory the inquiries or orders have originated, thus giving to the jobber the benefit of any special work which the Cassidy organization does along the lines of sales promotion.

The executive staff is headed by E. A. Cassidy, president of the company, and G. B. Gosman, secretary. L. M. Lloyd is advertising manager of the company in charge of its extensive and effective advertising campaigns. Frequent conferences of the sales staff insure its efficiency and compactness as it is steadily enlarged. With the addition of new lines recently the company has every reason to anticipate a prolonged and most successful season with a record of even more expansions by the time the third anniversary arrives.

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## COOPERATIVE EFFORT TO MAINTAIN FOREIGN TRADE.

Graphite, the monthly publication of the Joseph Dixon Crucible Co., Jersey City, N. J., prints a letter in the December issue from a well known business man urging the need of cooperation to maintain the country's foreign trade.

The letter was written from a New York business man to his friend in San Francisco and read in part as follows:

"Knowing your keen interest in the development of trade on the Pacific coast, you no doubt will also be interested in the great step ahead of us in the fight of the United States for commercial supremacy in the world trade after the European war.

"All broad minded men of the West realized long ago that cooperative effort is much better than individual effort, and with this thought in mind I have joined the American Manufacturers' Export Association, whose offices are at 160 Broadway, and have just been elected vice president of that association.

"I believe that this association is the most important factor for the development of the export trade in the United States, and I am very desirous indeed that your company should join this splendid organization and contribute your support to its great aims and purposes.

# *Moline Co. Merges With Engine Company*

### Combines with Root & Van Dervoort Engineering Co., Makers of R. & V. Engine.

The Moline Automobile Co., manufacturers of the Moline-Knight motor car and the Root & Van Dervoort Engineering Co., both of East Moline, Ill., have been consolidated as the Root & Van Dervoort Engineering Co., an Illinois corporation. In the past the two companies have been under the control of the same officers and the same interests will continue to operate the merged company, the only change actually taking place being that of the name. The Root & Van Dervoort Engineering Co. has been manufacturing high grade gasoline and kerosene engines under the trade name of "R. & V." engines since 1898, when it was established. In 1904 the company's officials foresaw the big future in the automobile industry and established the Moline Automobile Co., manufacturing the Moline car, which later became the "Dreadnaught Moline." The Knight sleeve valve motor was adopted by the Moline company for its product in 1913, which year the product took the name of the "Moline-Knight" and quickly established a widespread reputation through a 337-hour non-stop run under full load, during which it established new records for power, endurance and economy.

The Root & Van Dervoot Engineering Co. branched out into the manufacture of special munition lathes in 1916 and also took a large contract for eight-inch high explosive shells for the British government, and when this country entered the war W. H. Van Dervoort, president and general manager of the company, made an offer to turn his plant over to the government. This offer was accepted in part and the company is turning out quantities of war material for the government. In addition to filling these contracts for the government during the coming year the new company will continue the production of Moline-Knight automobiles, stationary engines, tractor and automobile motors.

The 1918 line of Moline-Knight cars will include two chassis, one 40 horsepower and the other 50 horsepower, to be known as models "C" and "G" respectively. The touring and roadster types on the model "C" chassis sell at $1650 and the model "G" touring at $1985. There is also a sedan model at $2280.

### BOY SCOUTS GUESTS OF REPUBLIC TRUCK CO.

A large company of boy scouts of Alma, Mich., were the special guests of the Republic Motor Truck Co. of that city recently on a trip to Camp Custer, the army cantonment at Battle Creek, Mich. The boys made the trip in a special train composed of Pullman cars, which was chartered for the occasion by the Republic company. Col. I. H. McKinney, mayor of Alma and superintendent of the Republic factory, accompanied the scouts, together with Major Charles Murphy and Rev. Frank Jackson, the latter chaplain of the company.

### NEW PRICE SCHEDULE ON WICHITA TRUCKS.

The Wichita Falls Motor Co., manufacturers of the Wichita line of trucks, has issued a new price schedule, which becomes effective Feb. 1. The list is as follows:

| Model | Capacity | Old Price | New Price |
|---|---|---|---|
| A.. | 2,000 lbs. | $1750 | $1800 |
| K.. | 2,000 lbs. | 1750 | 1800 |
| L.. | 3,000 lbs. | 1950 | 2100 |
| B.. | 4,000 lbs. | 2250 | 2500 |
| M.. | 4,000 lbs. | 2250 | 2500 |
| R.. | 5,000 lbs. | 2500 | 2700 |
| O.. | 7,000 lbs. | 3450 | 3600 |
| Q.. | 10,000 lbs. | 4000 | 4300 |

# *Place $3,000,000 Contract for Wheels*

### Government Places Orders for Escort Type with Prudden and Other Companies.

Contracts for $3,000,000 worth of escort wheels have been placed with the Prudden Wheel Co. and the Auto Wheel Co. by the government. The Kelsey Wheel Co. of Detroit and the Hayes Wheel Co. of Jackson, Mich., have also received large contracts for wheels of the same type.

### NEW KISSEL DEALER AGENTS APPOINTED.

The Kissel Motor Car Co., Hartford, Wis., has appointed the following individuals and firms as agents in their respective territories: Cuyahoga Sales Co., 4400 Euclid avenue, Cleveland, O.; Olympia Auto Supply Co., Olympia, Wash.; C. R. Arnold, Oxnard, Cal.; Moshel-Pardoe Motor Car Co., Paducah, Ky.; Buckridge & Yont, Brock, Neb.; KisselKar Sales Co., Davenport, Ia.; Arch D. Collins, Hereford, Tex.; Bundy & Marshall, Dows, Ia.; A. P. Humphrey, North English, Ia.; T. M. Foster, Guthrie Centre, Ia.; Mr. Omstead, Woolstock, Ia.; John Dewsnup, Deseret, Utah; Elko Lumber Co., Elko, Nev.; O. N. Hirsch, Centerville, Cal.; L. L. Herrman Motor Co., Wichita, Kan.; Tuscaloosa Motor Co., Tuscaloosa, Ala.; Bowen & Manbert, Salinas, Cal.; Wm. H. Springer, Las Vegas, N. M.; C. H. Barr, Paris, Tex.

# *Garages Classed As a Public Utility*

### They Are Finally Exempted from Heatless Day Closings Under National Fuel Order.

While it has been some time since the motor car was referred to as being in the non-essential class at Washington, the authorities recently received a demonstration of the fact that the public recognizes it as an imperative utility. Attention was called to this fact in a most strenuous manner when Fuel Administrator Garfield failed to include the garages in the earlier exemptions to his fuel order. The first Monday that the order went into effect found many machines marooned in garages on the upper floors, accessible only by elevators, the operation of which had been forbidden under the order. Doctors, salesmen and merchants were unable to secure their machines, with the result that a strong protest was sent to Washington, which proved effective in securing an exemption for the garages as coming under the head of public utilities.

A garage would have no reason for existence without the automobile and in classing it as a public utility similar classification is certainly established for the automobile to which it is only an adjunct at best.

### P. J. DASEY AND G. KOONS ON BUDA SALES FORCE.

P. J. Dasey and George Koons, both experienced men and well known in the motor car industry have been appointed to the sales force of the Buda Co., Harvey, Ill., manufacturers of engines for trucks and tractors.

Mr. Dasey, who has had years of experience with ignition and carburetion work, will be sales engineer of the Buda company, and Mr. Koons, who has been the experimental engineer for several years, will be engaged in sales and service work.

During 1918 the Buda company will concentrate on heavy duty four-cylinder engines only for trucks and tractors of various ratings. Lon R. Smith, sales manager of the company, states that by eliminating approximately 12 engines previously in production a greatly increased output has resulted in building for the future.

### G. P. DORRIS HEADS DORRIS MOTOR CAR CO.

George P. Dorris has been elected president of the Dorris Motor Car Co., St. Louis, Mo., to succeed W. R. Colcord. Webster M. Colburn, who was at one time secretary of the company, has been appointed general manager.

# Activities of Prominent Men of the Industry

## Resignations, Promotions and Other News of the Personnel of Motor Vehicle Manufacturing and Merchandising Companies and Allied Businesses

**H. B. Harper**, general sales manager of the Willys-Overland Co., Toledo, O., severed his connections with the factory Jan. 1 to become Philadelphia distributor of Overland cars.

**H. B. Harper Leaves General Sales Organization and Becomes Overland Distributor in Philadelphia.**

**John W. Bate** has resigned as vice president, in charge of engineering, of the Mitchell Motor Co., Racine, Wis. He will retain his considerable stock interest in the company.

**Ward F. Herst** has been made manager of the plant of the Wolverine Brass Works, Grand Rapids, Mich. He was formerly general manager of the M. & S. Gear Corporation, Detroit, Mich.

**Christian Girl** has been given charge of the engineering and design of the Liberty truck. In addition to his first office as chairman of the Military Truck Production Board he adds the title of head of the Quartermaster's Mechanical Transport Engineering.

**E. N. Broderick** is now special representative of the Burd High Compression Ring Co., Rockford, Ill. He has had a wide experience in the accessory field and has knowledge of its best methods.

**Jay C. Brandmore**, formerly with the Reo Motor Car Co., has been appointed special factory representative of the Mitchell Motors Co., Inc., Racine, Wis.

**E. E. Lake** has become assistant superintendent of the Rich Tool Co., Chicago, Ill., which is making one-piece valves for airplane and motor car engines. He is metallurgical engineer and was formerly at Detroit.

**E. D. Greenmayer**, formerly with the Briscoe Motor Car Corporation, and at one time superintendent of the Lewis Spring and Axle Co., Chelsea, Mich., has been commissioned major in the quartermaster's department to manage a truck factory in France.

**H. H. Bartlett** has been appointed director of the United States Rubber Co. in the experimental laboratories in the Dutch Indies and manager of the company's 40,000 acre rubber plantation.

**Charles S. Ash** is now with the National Wire Works Corporation of America. Mr. Ash will have complete charge of the engineering and manufacturing work of the company. He was formerly chief engineer and inspector of the Wire Wheel Corporation of America.

**Julian Malcom** of the city sales force of the Van Cortland Vehicle Corporation, distributors for Peerless Eight cars, has been commissioned a first lieutenant in the motor equipment section of the Ordnance Department. He has been connected with the Peerless company in New York for the past year and was for four years connected with the Stearns-Knight agency in Boston.

**William Wield** has been appointed assistant sales manager of the Fisk Rubber Co., Chicopee Falls, Mass. He came to the Fisk organization over a year ago to do some special work for the sales department. Previous to this appointment he was with the Hudson Motor Car Co. in New York City.

**John Peterson** has been appointed factory manager of the King Motor Car Co., Detroit, Mich. He was formerly with the Peerless Motor Car Co. and later with the Hupp Motor Car Co.

**George Lane** has been appointed general manager of the Parker Rust Proof Co. He was formerly sales manager and has taken the place of Mr. Wyman C. Parker, who is devoting his attention to business in the East.

**J. R. Brooking** is now western manager of the George D. Bailey Co., with headquarters at Spokane, Wis., maker of the Bailey ball thrust and Rayfield coupling. He was formerly with the Willys-Overland and Studebaker companies.

**Allen Loomus**, formerly research engineer of the General Engineering Co., manufacturer of the Doble Steam Car, has joined the engineering force at the Dayton airplane factory.

**Thomas Zimmerman**, formerly employed by the United States Light and Heat Corporation, Niagara Falls, will have charge of engineering in axle production for the Standard Parts Co.

**H. J. Adams** has been appointed assistant to H. L. Horning in the Automotive Products Section of the Council of National Defense. He is sales manager of the Garford Motor Truck Co.

**L. H. Hazard** has been appointed superintendent of production of the Velie Motors, Moline, Ill., to succeed C. B. Rose, who is in the War Department at Washington. G. E. Martin is chief engineer.

**Major-General Goethals** of the Quartermaster Corps will still retain his position as president of the Wright-Martin Aircraft Corporation.

**W. E. Dugan** has been appointed factory manager of the United States Motor Truck Co., Cincinnati. He was formerly with the Selden Motor Vehicle Co., Rochester.

**B. L. Craig**, president of the R. N. Vehicle Woodwork Co., St. Louis, has resigned the presidency of the Combined Motors Corporation, Chicago.

**Charles T. Bailey**, formerly with the Hal Motor Car Co., Cleveland, has been appointed assistant sales and advertising manager of the Templar Motors Corporation, Cleveland, O.

**Joseph Berg**, former chief engineer of the Stewart-Warner Speedometer Corporation, Chicago, has joined the Champion Ignition Co., Flint, Mich.

**H. W. Secor** has been appointed traffic manager by the Olds Motor Works, Lansing, Mich., and has found it necessary to expand its traffic organization in order to cope with the new and severe problems arising from the present freight situation.

**H. E. Mahaffey** is now assistant manager of the Cleveland branch of the Oakland Motor Car Co. He has been sales manager of the Gray Tractor Co.

**S. S. Toback**, for many years a dealer in New York City, has entered into the ranks of the manufacturers as general manager of the Redden Motor Truck Co., Detroit, Mich. He is a founder member of the Automobile Club of America.

**S. S. Toback Leaves Dealers' Ranks, Becoming General Manager of the Redden Motor Truck Co., Detroit.**

**L. D. Maxson** is now purchasing agent of the Olds Motor Works, Lansing, to succeed C. O. Miller. Mr. Miller is in Washington on a government service board.

**J. C. Matlack** has been elected president and general manager of the Globe Rubber Tire Manufacturing Co. He was former secretary and general manager of the Ajax Rubber Co.

**O. Wellington Snell** will be sole distributor of the Guaranty truck in New England. He is sales manager of the Guaranty Truck Sales Co. of Boston.

**Joseph J. Martin** will distribute the Lippard-Stewart in the territory from Toledo to the Pacific coast. He is manager of the Lippard-Stewart Motor Car Co., Buffalo, N. Y. William M. White will handle the territory from Pittsburgh to the Atlantic coast and C. S. Harvey will take the district from Ohio south to the Gulf of Mexico.

**R. D. Henshaw** has resigned from the Michelin Tire Co. He was for the past 10 years in charge of the New England and New York districts.

**H. A. Rasely** has been made eastern sales representative of the Olds Motor Works, with headquarters at New York City. Mr. Rasely was formerly service manager for the Australasian division of the General Motors Export Co., New York City.

**P. J. Dasey** has joined the sales force of the Buda Co., Harvey, Ill. Mr. Dasey has had years of experience, especially with ignition and carburetion, which will be valuable in his capacity of sales engineer to users and prospective users of Buda engines. The Buda manufactures engines for trucks and tractors.

**C. E. Ploch**, formerly connected with the Packard Motor Car Co. of Detroit, has been appointed chief engineer of the Fruehauf Trailer Co. The company has made such remarkable growth as requires continual additions to the engineering force.

**C. H. Bassett** is now southern zone manager for the Elgin Motor Car Corporation. Mr. Bassett has been associated with several companies, among which are the Studebaker Corporation, the Selden Motor Vehicle Co., the Marquett-Buick, the Maxwell and the Bour-Davis.

**Walter Bamford** has been appointed production manager of the Fulton Motor Truck Co. at Farmingdale, L. I., He has been connected with the Detroiter Motor Car Co. of Detroit.

**George Koons** has been appointed the experimental engineer of the Buda company.

**W. C. DuComb, Jr.**, a well known engineer in the automobile industry, has been appointed manager of the new office in Detroit of the Staybestos Manufacturing Co. of Philadelphia. His office is located in the Kerr building.

**Donald F. Whitaker** has resigned as sales and advertising manager of the Detroit Truck Co., Detroit, Mich.

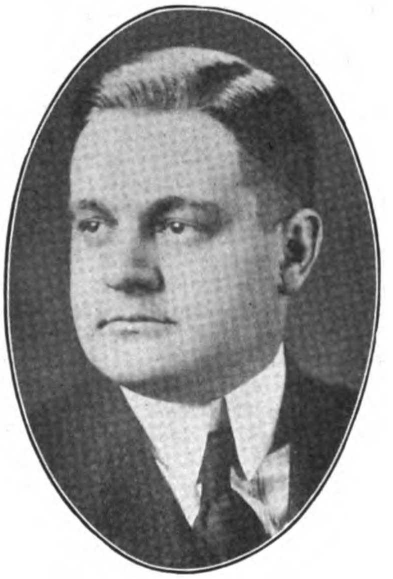
**C. J. Cunningham** has been promoted to the position of service manager of the Detroit Weatherproof Body Co., with whom he has been associated for the past three years, working in the factory.

**H. H. Henry** is now president and general manager of the Dart Motor Truck Co., Waterloo, Ia., and Milo D. Herron has been appointed general sales manager. Mr. Henry was manager of the Maxfer in Chicago, while Mr. Herron assisted in the formation of the Thomas Auto Truck Co.

**R. M. Hernandez**, who was for 10 years with the United States Tire Co. in the central district, has resigned, and is now central district manager of the Carlisle Cord Tire Co., Inc. His headquarters will be in Chicago.

**Edwin E. Coith** has been appointed manager of the new office at 608 Dearborn street, Chicago, of the Staybestos Manufacturing Co. of Philadelphia. Mr. Coith is an expert on brake lining materials.

**Allen G. Chambers** has become associated with the Russel Motor Axle Co., North Detroit, Mich., in the capacity of assistant sales manager, undertaking sales promotion and active selling of internal gear driven truck axles and supervision of advertising.



Allen G. Chambers, Assistant Sales Manager and Supervisor of Advertising, Russel Motor Axle Co.

**George H. McLin** is now manager of the tire and accessory store of the Charles Williams Stores, Brooklyn, N. Y. He was for three years manager of the tire and accessory department of the United States Rubber Co. in Chicago and later sales promotion manager of the Burd High Compression Ring Co.

**Ivan R. Gates** has enlisted in the army and will be attached to the aviation corps. Mr. Gates has promoted several salon and truck shows in San Francisco and Oakland, and was formerly a prominent racing driver.

**James H. Foster**, formerly chief inspector at the Chalmers Motor Co. and at the Lozier Co., has been made service manager and superintendent of the King Auto Sales Co.

**William A. Carroll** has become chief engineer and works manager of the Erd Motor Co., Saginaw, Wis., and will also act as director of sales and advertising. He was associated for several years with large motor manufacturing interests at Milwaukee, Wis.

**Earl W. McGookin** of Detroit will represent the Tillotson carburetor in the State of Michigan and also in the city of Cleveland.

**Charles E. Pagett**, St. Louis, Mo., has been appointed manager of the truck department of the Packard-Missouri Motor Co. He was formerly sales manager for the Federal Motor Truck Co.

**G. G. Giese**, St. Louis, secretary and manager of the Panama Rubber and Equipment Co., has joined the United States Army Quartermaster's Department.

**Louis Disbrow**, Minneapolis, Minn., well known as an automobile racer and engine designer, has joined the Moore Motor Vehicle Co. in the capacity of chief engineer. He will assume full charge of the engineering department of the Danville factory just as soon as the New York and Chicago shows are over.

**J. H. Schaniel** has taken over the exclusive selling agency for Merchants' Anti-Skid Chain Tightener. The device is made by M. H. Merchant, Syracuse.

**M. J. Osborn**, president of M. J. Osborn, Inc., St. Paul, Willys-Knight dealer, has withdrawn from the business, with plans to become a banker. F. A. Brodt, president and treasurer, has bought the service station at 305 West Third street.

**Fred M. Warner**, Dixon, Ill., has become vice president and general sales manager of the Interstate Tractor Co., Waterloo, Ia.

**M. H. Kanary** has been appointed general manager of the United Motors Co. Mr. Kanary is president and general manager of the Samson Trailer Corp., Grand Rapids, Mich., and also president of the Chicago Structural Steel Co., Chicago. He succeeds George P. Sweet, who has resigned to accept a commission as lieutenant in the motor truck division, Aviation Section of the Signal Corps at Washington.

**C. J. Welsh** has been appointed vice president and manager of the Detroit branch of the King Motor Car Co. For many years Mr. Welsh has been actively connected with the industry, having in the past been sales manager of the Abbott Corporation, Interstate Motor Car Co. and the Apperson.

**H. H. Swan** has been elected a director and general superintendent of the Pierce Tire and Rubber Co., Ashtabula, O. He was for six years superintendent of the tire department of the Portage Rubber Co. The Pierce Tire and Rubber Co. is planning to increase its capital to $200,000.

**L. G. Murray** is now manager of the Chicago branch of the Apperson Motor Car Co., succeeding J. C. Erbst, who has been advanced to other work. Mr. Murray was formerly manager of the United States Motor Co. and later southern district manager for the Haynes Automobile Co. Irving H. Jones has been made retail sales manager for the Apperson.

# *Analysis of Troubles With Leaky Piston Rings*

## How Gas Vapor Escapes Through Faulty Packing of the Four-Cycle, Internal Combustion Engine.

By **PAUL R. BEARDSLEY,** Secretary and Treasurer the Piston Ring Co., Muskegon, Mich.

The average motorist does not pay very much attention to his car, except to know how to operate it. When his car is not running smoothly, which is very often the case, he is apt to run it into a garage and tell them to clean the spark plugs, readjust the carburetor, or to leave the instructions, "Fix it up." Perhaps the spark plugs are dirty and when cleaned the car will run along smoothly, but only for a short time, when the same thing happens again. Most men have a very vague idea what the inside of an engine is like, but if they just gave it a little careful thought and study, a whole lot of engine troubles would be overcome, and this article is being written in an endeavor to explain the important part piston rings play in the efficiency of this unit.

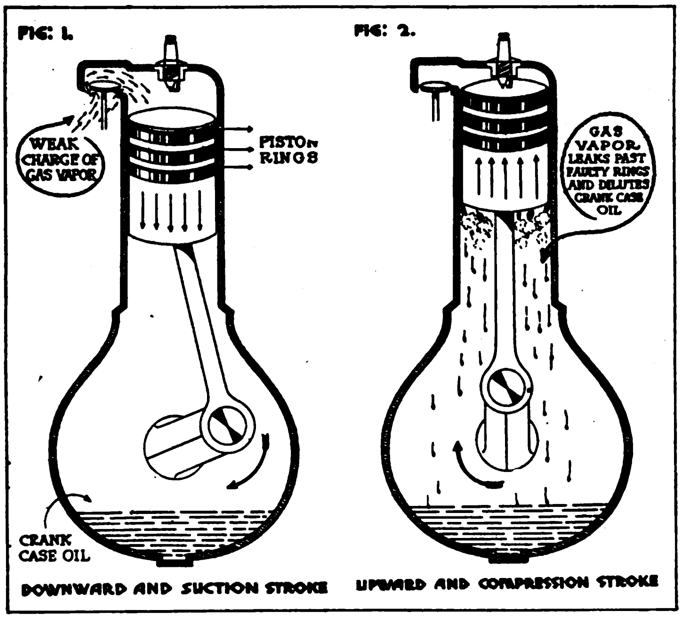


FIG: 1.
FIG: 2.
WEAK CHARGE OF GAS VAPOR
PISTON RINGS
GAS VAPOR LEAKS PAST FAULTY RINGS AND DILUTES CRANK CASE OIL
CRANK CASE OIL
DOWNWARD AND SUCTION STROKE
UPWARD AND COMPRESSION STROKE

**Showing Weak Charge, Leakage and Oil Dilution.**

For example—let us take the four-cycle, four-cylinder internal combustion engine, which is the machine almost universally used in automobile construction. We will take one cylinder and show the work that to be done by each one in turn.

The piston has a reciprocating motion, that is, it moves back and forth within the cylinder. Its first action is downward. This stroke is called the suction stroke, because it draws or sucks the gasoline vapor into the combustion chamber, supplying the fuel from which the engine derives its power.

Next comes the upward or compression stroke. The gas vapor is compressed. This pressure amounts to about 70 pounds per square inch. During this compression there is a hot spark in the spark plug, which instantaneously ignites the compressed gas. The explosion and expansion of gas forces the piston downward, and this power is transmitted to the rear wheels, causing the automobile to be propelled.

The last upward or exhaust stroke forces the burnt gases from the cylinder and it is all ready to repeat the same operations.

There is necessarily a small clearance between the piston and the cylinder walls to provide for free reciprocating motion, which must be taken care of, so as to create a uniform contact and pressure, which will make the piston bearing practically compression tight. This is accomplished by the use of piston rings, which fit into grooves in the piston and prevent the escaping of gases.

Figure 1 shows the downward or suction stroke of the piston. If the rings are not proof against leakage it is impossible to create a vacuum and consequently a weak charge of gas vapor is drawn into the cylinder head or combustion chamber. This mixture is further weakened by the air which escapes from the crank case past the rings into the combustion chamber, resulting in decreased power. This is a very ordinary trouble and the average motorist instead of equipping his motor with the proper piston rings will readjust his carburetor to get a richer mixture of gas, hoping to overcome this trouble. You can see at a glance that this is mere extravagance.

Figure 2 shows the compression stroke and the importance of the proper piston rings. If the rings leak some of the gas vapor instead of being compressed slips by the rings and condenses and dilutes the crank case oil. Many a car owner has ruined the bearings of his motor because of this trouble, but instead of equipping his car with new rings, he condemns the oil he has been using and seeks another grade. Perhaps the best way to explain the importance of compression is to mention the fact that if the compression is high enough (600 pounds or more per square inch) the gas ignites spontaneously.

Figure 3—The power stroke shows you how easy it is for gas to escape past the piston ring instead of utilizing all its expansive forces on the piston head where it belongs. In this case leaky rings cause a considerable loss of power.

Figure 4—The exhaust stroke shows how, with leaky rings the burnt gas, smoke and soot is not all forced through the exhaust manifold as it should be. This leaks past the rings and fouls the oil in the crank case, or remaining in the combustion chamber results in the accumulation of carbon deposits.

One of the most common and annoying troubles from leaky piston rings is with the spark plugs. Oil leaks into the combustion chamber and being burnt leaves carbon deposits on the spark plug points and also valve seats. To be efficient a spark plug must give an extremely hot spark and this cannot be done unless the points are kept clean. Of course carbon deposits on the valve seats prevent the valves from entirely closing, which cause a great loss of power and make necessary frequent regrinding of valves.

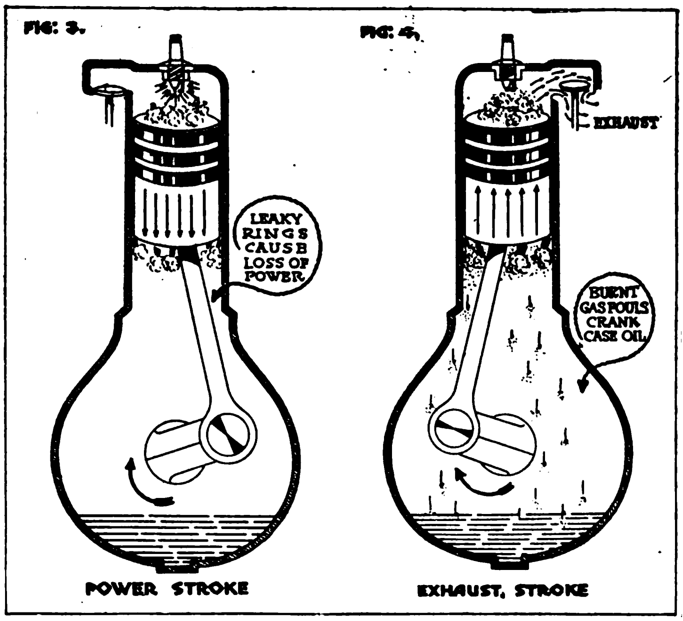


FIG: 3.
FIG: 4.
LEAKY RINGS CAUSE LOSS OF POWER
EXHAUST
BURNT GAS FOULS CRANK CASE OIL
POWER STROKE
EXHAUST, STROKE

**Showing Loss of Power and Fouling of Oil.**

# Opportunity for Current To Eliminate

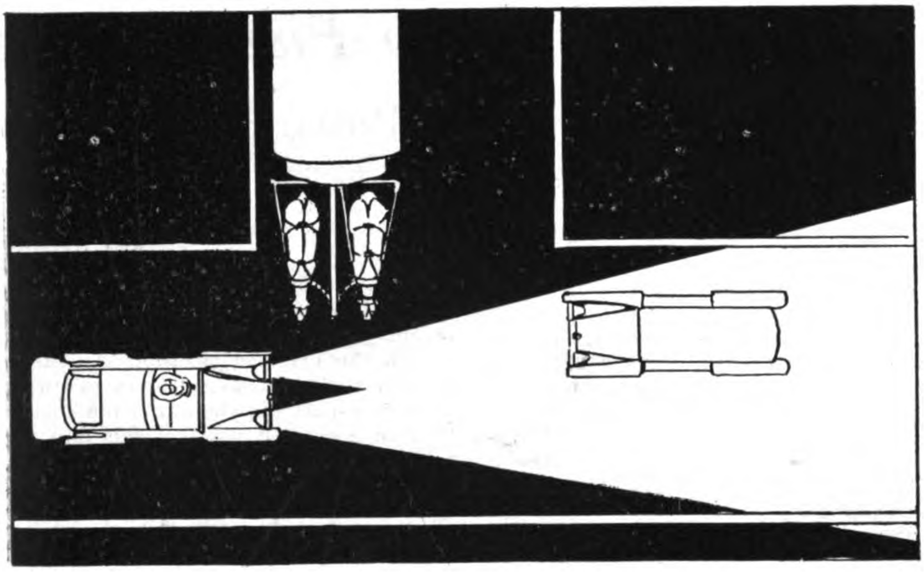


**Diagram 1. Blinded by the Lights on the Approaching Machine, the Driver Cannot See the Horses Entering from the Side Street.**

PROLONGED study of the headlight problems of the present year makes clear the pressing need that every car in operation on the public highways should be equipped with non-glaring headlights. Legislation in several of the leading states has established certain principles for lighting the road. While there has been some confusion over the details, in general it is recognized that the elimination of glaring headlights is fully decided upon. There is no question but that every car should be equipped with devices which will bring the motorist on the right side of the law and make more beneficial to him, as well, the hours of its use. Things have come to such a point that all dealers should recommend attachments of merit which will confine the headlights of motor cars to their proper functions. Loosely stated this is to light the road and not the tree tops.

The accompanying diagrams are of exceptional value to every dealer, showing, as they do, unusually strong arguments for safety. Let the dealer show them to his customer as four very good reasons why headlight glares should be eliminated from the public highways. In this way they will furnish many selling points for headlight devices.

In an exhaustive investigation of the headlighting problems made by the Accessory and Garage Journal, which included a close examination and tabulation of the laws of the various states which have so far legislated upon the subject, it was found that the motorist can comply with the intent of the law in practically every state by observing the extreme provisions, which would include the use of headlights that are so constructed, treated or equipped to prevent the beam of light rising more than 42 inches above the road at a point 75 feet ahead of the car, yet not so dimming the light but what it will be sufficient to make the roadway clearly visible 500 feet ahead and to provide a sufficient illumination to reveal objects clearly at a distance of 250 feet ahead of the car and 10 feet to each side of the road at a point 10 feet ahead of the car; headlights should not exceed 21 candle power each and spot lights of over four candle power should be equipped with some dimming device or means of deflecting the rays. It was found also that only proper equipment of a headlight eliminated the motorist as a violator.

There is another phase of the headlight problem which is the basis of the laws framed for the protection of traveling motorists, that of safety. And in motoring an increase of the factor of safety is doubly important because of its public and private character.

### Examining the Safety Factor.

The motorist who drives a car fitted with blinding headlights is a menace to traffic and a breaker of all laws of safety, as well as those of government. Not only is he a menace to other drivers, but he is all the time taking a chance with his own safety and the safety of the passengers in his car. It is, therefore, the duty of every law abiding citizen to see that the headlight laws are enforced, and that no automobile is allowed to be operated on the highways without some means of eliminating the dangerous filament glare common to electric globes.

The traveling public would never allow an automobile to be operated on the highways if the machine were fitted with mudguards extending three feet on each side of the car, yet a pair of glaring headlights, in effect, are just as great a menace.

The driver of a car approaching a high candle power light is temporarily blinded and his sense of proportion is altered. There is a certain nervous reaction that would tend to cause the driver to turn his car toward the source of light and thus cause a collision. There are many cases on record where two cars have come together in the evening with apparently no cause. Both drivers are put in the same peril, for the driver whose car is fitted with glaring lights does not know of the effect upon the approaching driver until it is too late to swing to the right. In many cases such a procedure would be impossible because of the narrowness of the road or the proximity of ditches or walls.

### Lighting Makes Its Own Perils.

Another peril which confronts the driver of a car equipped with glaring lights is the danger to his car through collision in turning corners. Accustomed as he is to intense illumination, he may turn a corner and run directly into a stationary machine or team, for in turning he is momentarily deprived of the use of his lights and poorly illumined objects are not seen at all.

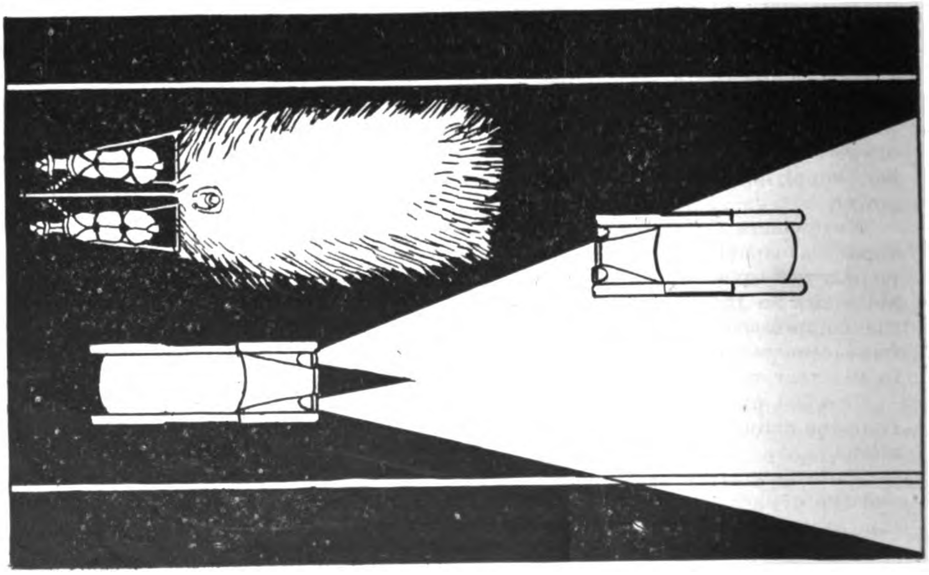


**Diagram 2. When the Road on Both Sides of the Glaring Headlights Is in Darkness There Is Danger of Collision with a Slow Moving Vehicle Ahead.**

# *Dealers to Aid Campaign Glaring Lights*

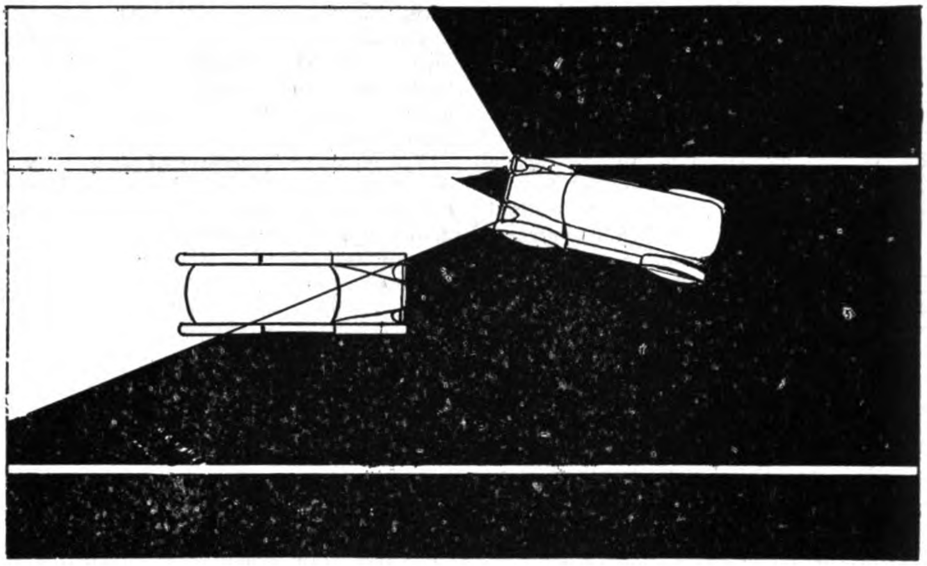


**Diagram 3.** A Driver Blinded by Glaring Lights Instinctively Crowds Toward the Light, Forcing the Oncoming Machine Into the Ditch.

It, therefore, is distinctly to the advantage of the motorist himself to fit his car with non-glare or indirect illuminating devices, as much for his own safety as for compliance with the law.

If every motorist made an effort to secure ideal illumination for his own car he would be obliged to equip his machine with higher candle power lights than any other car on the road that he might meet. This would mean that sooner or later every car would be equipped with two miniature suns, the light from which would effect drivers with a temporary blindness to poorly illuminated objects for quite a few minutes.

Happily there are laws in the land which prevent such an abuse of the roads and motorists' rights, but, nevertheless, the nuisance still continues to a degree. When one considers the number of cheap appliances and devices that may be used for eliminating the glare of headlights, there is no excuse for the abuse of the road or the breaking of the laws.

### Risks Taken on the Highway.

Every operator will admit that there is untold inconvenience experienced in the approach of a blinding glare. If he is not familiar with the highway over which he is proceeding he runs the risk of a collision with a pole or the ditching of his car.

While within the field of illumination he is unable to distinguish any objects on either side of the approaching machine and so, unless he stops his car, he practically takes his life in his hands if he proceeds. It may be that the approaching car is in the act of passing a team or pedestrian, and the blinded operator in this case will be the guilty cause of a serious accident, even though he is to all intents and purposes innocent.

By not enforcing the law a premium is put on the breaking of the laws because of the fact that in order to protect ones self the motorist is forced to keep his lights at their maximum efficiency. This generally accepted attitude of trying for light supremacy leads to the feeling that the laws are too exacting. Such an attitude is reprehensible and has been responsible for hundreds of accidents in which the participants were those who believed regulations to be right for other people, but unnecessary in their case, consequently ignoring them until the inevitable consequences overtook them.

It is the same situation that developed with the speed limitation laws which have been in force for years, yet a magistrate who in New York city handles thousands of cases annually, finds that only the severest penalties serve to keep the same offenders from constantly reappearing in court.

No one doubts the intelligence of the offenders or that they do not realize the danger incident to their carelessness, but there is no explanation for the constant transgressions of the laws except that they are willing to "take the chance" themselves, regardless of the consequences and danger to others.

Perhaps it is because of the fact that many motorists are willing to pay possible fines and still retain their glaring lights that there are so many of these nuisances still in use; perhaps, again, it is because the owner of the brilliant lights is not so liable to accident, as are the other travelers; at any rate it is all a question of selfishness and disregard for the safety of others.

In most instances it is a matter of a few hours, possibly the outlay of a little cash or because the motorist can secure cheap insurance against accident for himself as well as others. There are many devices on the market, as well as lenses, that are both ornamental and useful, which are procurable for but little money.

### Devices to Remedy the Evil.

Headlight devices may be divided into four classes, special lenses, bulb attachments, shades and tilting devices. The first are usually in the form of prismatic surfaces which tend to reflect the direct rays of light without absorbing them, and directing them downward to the road or toward the side. The second class are bulb attachments, some of which deflect the light, others reflect it and still a third type absorb the direct rays. The third class may be attached either to the reflectors or the lamps themselves and are designed to tip the lights forward and so cut off all illumination above a certain height.

In an article of this length it will be impossible to give a description of every device on the market, so only a few of each type are described.

The Corning Glass Works, represented by Edward A. Cassidy Co., Inc., of Madison avenue, New York, manufacture a

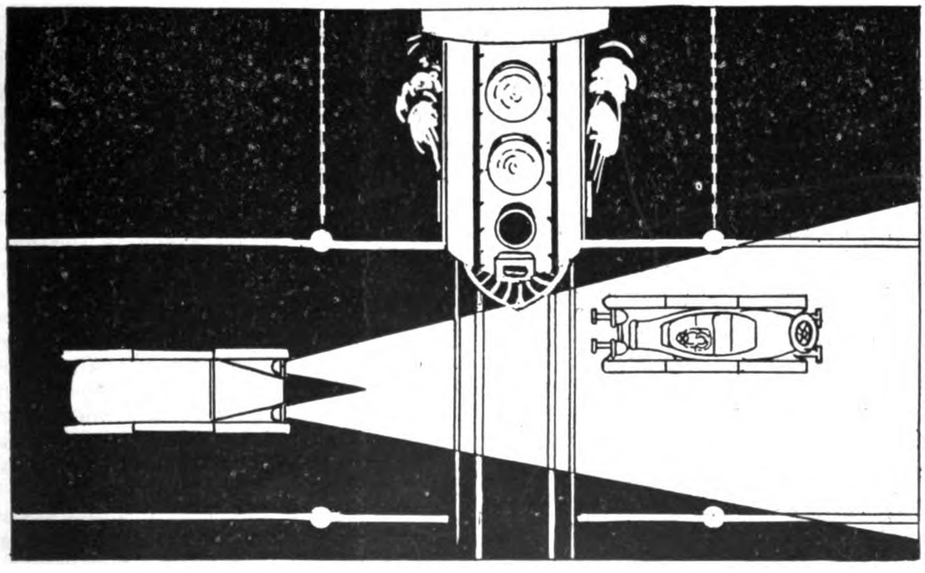


**Diagram 4.** At an Ungated Railway Crossing the Blinded Driver Is Unable to See the Dim Lights of the Approaching Locomotive.

headlight lens which may be obtained in sizes from 3 to 11½ inches in diameter in both plain and Noviol glass—the so-called Noviol glass being a yellow. This lens is in one piece but cast with ribs parallel with the ground line, broken at the centre by vertical lines, giving a checkerboard effect of triangular formation. By means of the longitudinal prisms the light is deflected downward, while the centre formation distributes the light to the sides. The makers claim that though the light is concentrated at the front of the car there is an absence of glare.

A device called the Shaler Roadlighter is an attractive lens which is scientifically designed to deflect light by prisms. The lower half of the lens is divided into numerous prisms by diagonal lines which start at a centre vertical line, while above the centre, instead of being clear vertical and longitudinal lines and prisms deflect light toward the centre. A concentrated ray of light with no glaring beams above the legal 42 inches from the ground line is said to be the result of the prism arrangement. This device is sold by C. A. Shaler Co., 82 Fourth St., Waupun, Wis.

The Legalite Lens, made by the Legalite Corporation, Boston, Mass., is curved and cast with longitudinal ribs to deflect the light downward and prevent direct rays from extending above a line parallel with the road. The curved feature deflects the light to the sides.

In the Osgood the longitudinal prisms are of varying width, the lower prisms are designed to illuminate the road far ahead of the machine, while those at the top are at a sharper angle and refract the light to the road nearby. Side illumination is obtained by refracting the light at the centre of the lens by a rib at the centre; this device is sold by the Osgood Lens and Supply Co., Chicago.

A device called the Prismolite, made by the Prismolite Co., Fourth and Gay streets, Columbus, O., is a checkered surface glass with small ⅛-inch prisms covering the entire surface. This glass produces two sheets of light, neither of which has any of the direct glare rays.

The Saferlite Lens Co. of New York manufacture a lens of the same name, which consists of finely cut prisms averaging 30 to the inch, distributed over the face of the lens. The direct rays are refracted over the entire surface and give a bright glow on the road ahead. With this device direct bulb illumination and glare are eliminated.

An ornate device known as the More-Lite Lens, is manufactured by the L. E. Smith Glass Co. of Mount Pleasant, Pa. This device is made in either white or amber glass for any type of headlight and consists of a number of concentric prisms, cut by radii and fitted in the centre by triangular prisms, for diffusing the direct glare.

The Warner Lens, made by the Warner Lenz Co., Chicago, Ill., is an extremely attractive lens, consisting of round projections arranged in a fan like arrangement around the centre of the glass. Twelve of the large car manufacturers have adopted this lens as standard equipment. Though the light transmitted through this lens is brilliant and possesses high illuminating power, it does not glare in the eyes of the approaching driver.

A distinctive lens, known as the Star, is manufactured by the Lancaster Lens Co. of Lancaster, O. This is a glass front upon which is sandblasted a many pointed star, the points of which are near the outer circumference. Only the extreme points of the star are left clear, so that practically all of the direct glare is diffused through the finish of the glass.

### Second Type of Devices.

The second type of head lamp devices are designed to be attached to the bulb and either absorb or refract the light rays. The Fracto lens, made by the Crew-Levick Co. of Philadelphia, Pa., is of this type and consists of a heavy glass half cone, which is attached to the lower part of the globe. By means of ribs the light rays are refracted and cover a fan shaped area in the road ahead.

J. H. Faw, Inc., 41 Warren street, New York, market a device called the Lennon light protector. This device is made of one piece of polished nickel plated spring brass and fits on the under side of the light bulb. By reflecting the light to the upper part of the parabolic reflector all direct beams are thrown down upon the road.

The Perrin Manufacturing Co. of Detroit, Mich., sell an aluminum device which clamps on the under side of the bulb and prevents direct rays from being projected upward.

A well known device for cutting off and controlling the upward light rays is known as the Lawco deflector, made by the F. H. Lawson Co. of Cincinnati, O This device consists of a visor like arrangement placed in front of the headlight and interrupts all but longitudinal light beams.

The Glare-Off, made by the Glare-Off Co., Broadway, New York, is a device which may be attached to the regular lens and is designed to cut off certain light rays, both at the centre, where the bulb is located, and at the upper outside edges of the lens.

### Representations of Another Type.

A device of the fourth type is represented by the Pennock headlight tilter. When this device, which is made by the Specialty Manufacturing Co., Minerva, O., is in use, both headlights may be tilted by the pressure of the foot upon a pedal located in the car, thus cutting off all but the necessary light upon the road.

The A-B auto eyes, made by the Adams-Bagnall Electric Co. of Cleveland, O., are unique in that the light tilting arrangement is electrically operated. Pressure upon a button, conveniently located within the car, causes a motor in one of the lights to operate and the lights are tipped forward. Continued pressure brings the lights back to normal position.

### Additional Devices.

Among other makers of headlight lenses, hoods, globe devices, etc., are the following: Letts Deflector, Manifold Heater Co., Cortland, N. Y.; Rand Reflector, Rand Mfg. Co., Haverhill, Mass.; Glare Screen, Palmer Glare Screen Co., Cleveland, O.; Offset Reflector, C. T. Sutterley & Co., Philadelphia, Pa.; Stryker Reflector, C. L. Stryker, Buffalo, N. Y.; Ames Reflector, Heinze Electrical Co., Lowell, Mass.; No Glare On, No-Glare-On Co., Watertown, N. Y.; Da-Lite, Jeanette Toy and Novelty Co., Jeanette, Pa.; Primolite, Standard Glass Specialty Co., Morgantown, W. Va.; Mac-Kno Bulb, F. F. MacLean Co., Syracuse, N. Y.; Perrin No-Glare, Perrin Manufacturing Co., Detroit, Mich.; Omolite, Omolite Co., Jamestown, N. Y.; Holophane, Holophane Glass Co., New York; Crockell, C. W. and C. H. Crockett, Troy, N. Y.; Rite Ray, Reflex Co., Newark, N. J.; Consolidated Sales Co., Milwaukee, Wis.; Full Ray, Purfex Manufacturing Co., Philadelphia, Pa.; O-U-Lite Dimmer, O-U-Lite Co., Racine, Wis.

## GREAT OPPORTUNITY FOR THE "MODERN FREIGHTER."

Under the title of "The Modern Freighter," the United States Motor Truck Co., Cincinnati, O., has issued a folder calling attention to the need of additional transportation facilities and the opening it has created for haulage and transfer business.

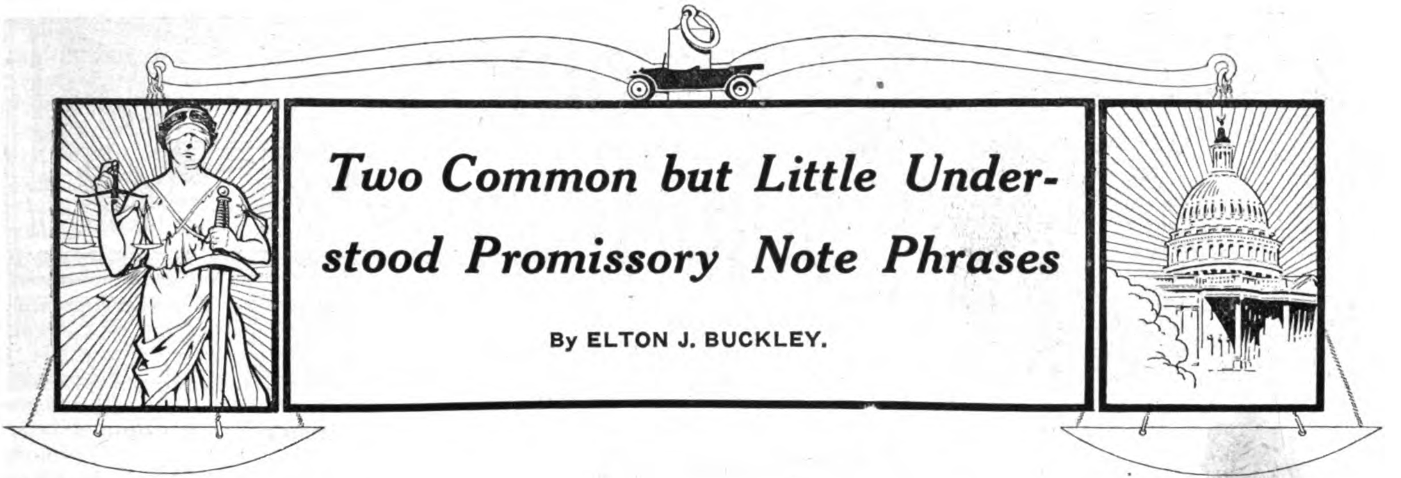
"Great opportunity knocks at the door of the haulage and transfer business—a great duty has been placed upon it," is the announcement made.

"The war has overburdened the railroads. They cannot give the service they formerly gave. Fast, reliable transportation for short distances is much in demand by manufacturers and distributors. And as the war preparations develop that demand will steadily increase.

## A. J. PICARD & CO., INC., WILL WHOLESALE EXCLUSIVELY.

A. J. Picard & Co., Inc., one of the largest and oldest automobile accessory jobbing and distributing houses in the country, who started business in a small way at 1720 Broadway, New York City, many years ago, will discontinue their retail store at 1700 Broadway, and in the future do a wholesale business exclusively, with headquarters in their new building, 61st street and Broadway.

The head of the company, A. J. Picard, has been identified with the motor car industry for 20 years and is the dean of the dealers, having been a representative for the Darracq, a French make, which was sold in this country when motor cars were a curiosity. His company covers all the eastern part of the United States and have a sales force of 24 men, handling the entire line of motor car accessories and serving thousands of dealers. In addition to its big accessory business the company is distributor in the East for the Stromberg carburetor, Gabriel Snubber, Apollo Rubber Co. and national distributors of the "Genemotor" starting and lighting system for Ford cars, manufactured by the General Electric Co.



# Two Common but Little Understood Promissory Note Phrases

By ELTON J. BUCKLEY.

AFTER making an experiment which I am sure will interest readers hereof, I shall devote this article to explaining two phrases in everyday use in connection with promissory notes which directly affect the rights and the remedies of all the parties to a note, whether maker, payee, indorser or holder.

I had long suspected that business men generally had no real idea of the meaning of the phrase "without defalcation," which occurs in practically every promissory note, and the phrase "without recourse," which often occurs after the name of some indorser. I asked 10 business men, every one of whom has more or less to do with promissory notes, what he thought the words "without recourse" meant if written after an indorser's name. Three knew, but the remaining seven had no adequate conception at all. I also asked the same 10 what the words "without defalcation" meant in the body of a promissory note. They appear in practically every promissory note given. Not one of the 10 knew this. They all thought it meant without embezzlement, "defalcation" being a familiar synonym of embezzlement.

After this experiment it occurred to me that I had better devote one of these articles to elucidating these most important terms.

"Without defalcation" has nothing at all to do with embezzlement. The word "defalcation" is here used in a different sense—the sense of set off or counter claim. When a note containing these words is signed, it means that the maker of it will pay for it in full even if he has a good claim against the holder of the note which he could ordinarily set off against it.

Let me illustrate: A is a hardware merchant, B is a contractor. A sells B all his building hardware, and by and by it reaches a large sum and B gets behind hand in paying it. Finally B gives A a note "for value received and without defalcation," payable in six months. Before the note is paid A decides to enlarge his store and engages B to do the work. After the work is done their account stands thus: B, the contractor, owes A, the hardware dealer, $1000 for building hardware, for which A holds a note. A owes B $750 for the enlarging of his building. When the note comes due, if those words "without defalcation" had not been in it, B could have deducted A's debt of $750 from B's debt of $1000 and given A a check for $250. But "without defalcation" means that B will pay in full without any set off, so he must pay the full $1000 and run his chances of getting his $750 out of A as a separate matter.

**ARE you in need of legal advice? Do you want first class professional service at no cost to yourself? If so, address a letter to Mr. Buckley, in care of the Legal Department of the Accessory and Garage Journal, detailing your troubles as clearly as possible. He will give immediate answer, either on this page, for the benefit of other subscribers who may have the same trouble, or direct by mail, as the inquirer specifies. The writer should sign his full name and address, but only initials or a pseudonym will be published in these columns. The service is free to subscribers to this magazine.**

This rule also binds indorsers. In other words, if you indorse a note which contains the words "without. defalcation," you will have to pay it in full no matter how good a counter claim you might have against the holder when it fell due.

All states do not enforce this rule strictly; some, in fact, refuse to enforce it at all. But the only meaning the words have is the one which the law gives them, and if they are in a note they may at any time rise to plague you.

Now as to the phrase "without recourse." The indorser who writes those words after his name puts himself in a totally different position from other indorsers. As everybody probably knows, a man who simply writes his name on the back of a note must pay it if the maker doesn't. But the indorser who uses the words "without recourse" doesn't have to pay it if the maker doesn't. He merely transfers to the next man the chance that the maker, or perhaps some of the other indorsers, if there are any, will pay it. If they don't, it is no concern of his.

The words mean what they seem to—they constitute notice that nobody can have recourse to or payment from the indorser who uses them. This is called a qualified indorsement, and here is a standard definition of it:

> A qualified indorsement constitutes the indorser a mere assignor of the title to the instrument. It may be made by adding to the indorser's signature the words "without recourse" or any words of similar import. Such an indorsement does not impair the negotiable character of the instrument.

Simply transferring the title to a note is a vastly different thing from agreeing to pay it if the maker doesn't. In most cases an indorser who uses the words "without recourse" is useless as a security. The only liability resting on him is that of vendor—seller of the note. He is liable if he falsely represents the financial standing of the maker, and he practically guarantees that the maker of the note was legally qualified to make it, meaning, for instance, that the maker is not a married woman forbidden to make such a note. He also guarantees the genuineness of the signatures and that the consideration was legal. As most notes are all right in these respects—or you can to find out about them for yourself—the qualified indorser, in the average case, really adds nothing at all to the strength of the note, or its security.

How this works out I can show by a case that happened only a short time ago. A business man was asked to lend some money for an outside deal. The security offered him was a promissory note with four names on it—the maker's and three indorsers. The maker and two of the indorsers were of doubtful financial standing. The doubtful indorsers indorsed without qualification. The third indorser was of undoubted responsibility, but he wrote "without recourse" after his name. The lender of the money said he knew what "without recourse" meant, but he hadn't noticed it, and he lent—and lost—his money on the security of a note that wasn't worth the paper it was written on. Had he paid attention to the little words "without recourse" he could have saved it all.

Be sure, therefore, that the indorser whose name is really the main strength of a note which you are asked to take has not eliminated that strength by using "without recourse."

(Copyright, by Elton J. Buckley.)

ACCESSORIES
AND
EQUIPMENT

### WRIGHT ROLLER BEARING.

A roller bearing for the front wheel spindles of the Ford chassis, somewhat similar to bearings now used for high class automobiles, is being put on the market, and made by the Wright Roller Bearing Co.

The bearing is unique in that it has no cage or retaining mechanism to hold the rolls in the raceways, and it is thereby possible to use more rolls than in the conventional type of roller bearing. The makers claim an approximate increase of 50 per cent. in the number of rolls possible in the same size bearing.

This bearing has been designed because of the general tendency of engineers toward roller bearings for this particular point in chassis design. As shown in the accompanying cut, it fits the Ford spindle with no mechanical change and presents no more difficulty in installing than the replacement of the present bearings.

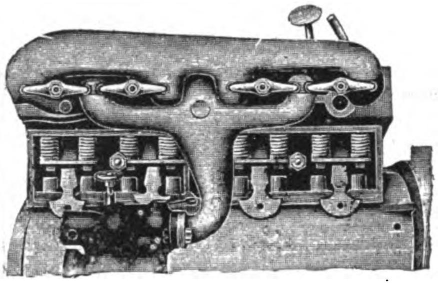
**Marketed by the National Bearings Service Co., Philadelphia, Pa. Write for prices and literature.**

### BUELL EXPLOSION WHISTLE.

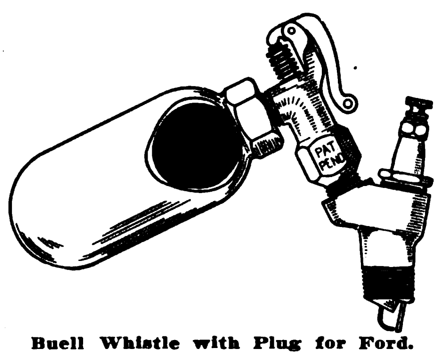
The average pedestrian today is wholly used to the ordinary type of automobile warning signals and frequently ignores the sound of the horn. To secure a distinctive warning note the Buell explosion whistle has been designed. This device is made in two types, the regular type for all cars fitted with priming cock openings, and the special or Ford type for engines having a single opening for spark plug.

The device is operated by the pressure of the exploding gas in the engine, and is controlled by a valve connected by a wire to any convenient location in the car. As the gas in each cylinder explodes many hundred times a minute, the whistle emits a number of shrill blasts when the wire is pulled, giving a warning which is distinctive and penetrative. The makers sell the device under a 10 years' guarantee and claim that it will, under ordinary conditions, last longer than the car itself.

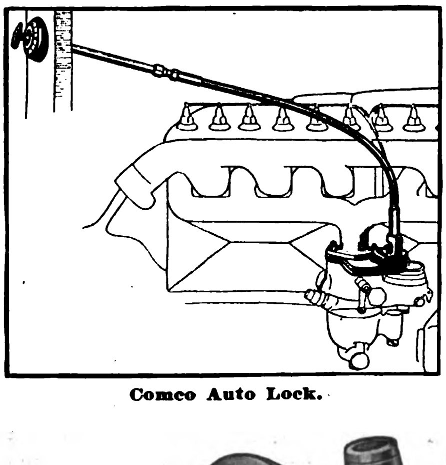
**Manufactured by Buell Co., 1610 South Michigan Ave., Chicago, Ill. Price for single tone with valve, $4.25; chime model with valve, $6. Special plug without whistle for Ford car attachment, $1.25; whistle extra as above.**



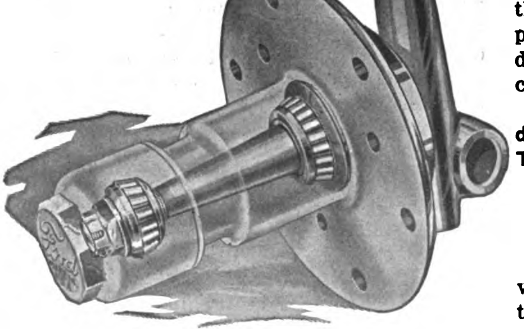
Valve Spring Compressors.



Buell Whistle with Plug for Ford.



Comco Auto Lock.



Wright Bearing for Ford Chassis.

### COMCO AUTO LOCK.

Every owner desires to insure himself or herself against the theft of his or her car. The Comco Auto Lock is designed for practically any car and requires no key to unlock it. With this device locked a gas mixture cannot pass from the carburetor to the engine, for a slide valve closes the intake passage entirely. To open it is only necessary to turn the knob on the dash to a prearranged set of numbers, and the valve is opened. More than 250,000 combinations are possible according to the manufacturers, so that the chances of hitting on the proper combination by an unauthorized person are very remote.

For ordinary applications the lock is bolted between the carburetor and intake manifold and forms a part of the equipment. A flexible shaft connects the lock with an indicator dial on the dash, which may be operated in the dark if necessary, once the operator knows the proper combination.

**Manufactured by Combination Auto Lock Co., 1134 Chestnut St., St. Louis, Mo. Price, $10. Ford special, $7.50.**

### TINOL FLUX.

Every repair man or electrician who has much to do with soldering work realizes that the main difficulty is encountered in removing the soldering flux. If the flux is not carefully removed, in most cases, corrosion of the object will result and the object of the joint lost.

Tinol flux is the result of much experiment and trial and the manufacturers claim that it does not have any eating or corrosive effect on copper, brass, iron, steel or any other metal. They claim that the action is such that the flux, as it evaporates, leaves behind it a thin coating of clean, bright tin, to which the solder takes readily. Another important fact to be considered is that it does not damage fabrics, such as silk or cotton insulation on electric wires.

**Manufactured by Hess & Son, Philadelphia, Pa. Two-ounce cans, 25 cents. Trial box, 10 cents.**

### VALVE SPRING COMPRESSOR.

Much of the time spent in grinding valves can be charged off to removing the valve springs. Much more of the time is used in replacing the springs.

To eliminate the necessity of removing the springs, for grinding or other repairs, the Warnola Valve Spring Compressor has been designed.

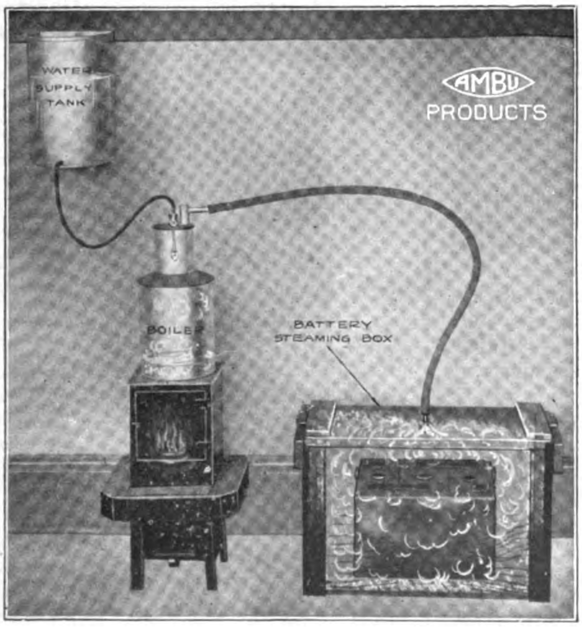
This device consists of a small, flat platform or table, which is cut with slots in which two valve stems fit, and through which the valve keys, pins or split washers are removed. This table is mounted upon a short lever, which is provided with a leg or tongue for prying. The device is slipped over the valve stems, the lever depressed, raising the springs, and the pins or keys removed. The valve may then be taken from the engine, while the compressor remains in place until the valve is replaced, the key inserted and the compressor removed.

**Manufactured by Warnola Manufacturing Co., 73 Wooster St., New York City.**

## PEERS AMBU STEAMER.

The American Bureau of Engineering has just put a product on the market called the Peers Ambu Battery Steamer, an apparatus for softening the sealing compound on starting and lighting batteries by means of steam, so that the battery may be opened easily and quickly and without the use of gas flame or blow torch. They claim that the use of this apparatus eliminates almost entirely any possibility of damage to any of the delicate parts of a battery, and also guarantees a clean, quick job in removing the sealing compound.

The device consists of three parts: A steam generator, a steam box and a water supply tank. When a battery is to be opened the connectors are first removed and the battery then placed in the steaming box and steam passed into the box for about 15 minutes. This makes the sealing compound soft, so that it can be removed readily with the point of a screw driver, or putty knife, the entire operation of opening the battery being performed within five minutes after it is removed from the steaming box.



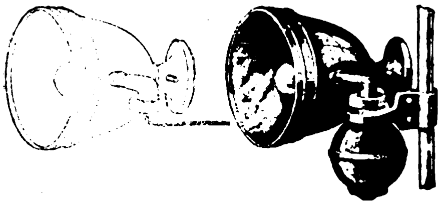
Peers Ambu Battery Steamer.

The generator or boiler is made of heavy galvanized iron, the water in this unit being automatically kept to a low level so that steam is generated very quickly.

**Manufactured by American Bureau of Engineering, 1018 Wabash Ave., Chicago, Ill. Write for prices.**

## THE AUTOREELITE.

A spotlight that has a number of uses for many purposes is called the Autoreelite. As the name suggests the light is provided with a reel upon which is wound 12 feet of flexible cord, so that the light may be removed from the windshield and carried to practically any part of the machine, or mounted upon a post at the side of the road for camping purposes. The light should prove very convenient for making roadside repairs and adjustments.

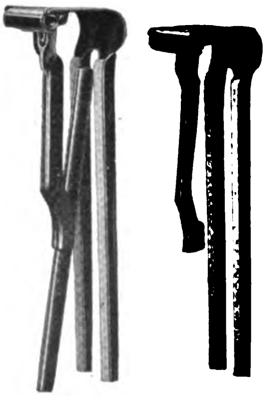


The Autoreelite.

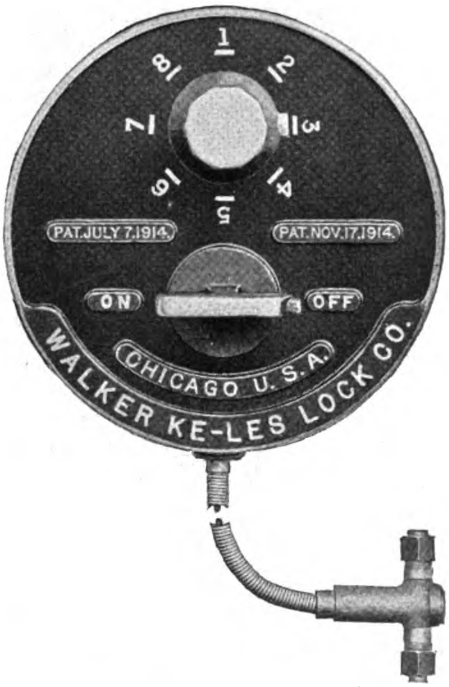
A conventional windshield clamp is mounted on the shield and to it is fitted an ornamental bulb in which is mounted the wire upon the reel. At the top of the fixture the spot light is mounted and so designed that it may be clamped in practically any position.

Both the lamp and bracket are finished in black enamel and the lamp is fitted with either clear or non-glare lens, backed by a 21 candlepower nitrogen lamp in a silvered parabolic reflector. A switch is mounted at the back of the lamp. In addition to the regular equipment a 3½-inch reducing mirror may be had if desired at a slight addition in cost.

**Manufactured by Anderson Electric Specialty Co., 562 W. Van Buren St., Chicago, Ill. Price without mirror, $7.50; with mirror, $8.**



Auto-Scope Windshield Wipers. No. 1 and Junior.



## WALKER KE-LES LOCK.

The Walker Ke-Les lock is a device constructed on the combination principle, having no key of any kind. With the switch handle in the "OFF" position, both the gasoline and ignition is cut off, making it impossible to start the engine, yet complying with the law in some states which rules that an automobile must be left so that it may be moved in case of fire. To unlock the device, the correct combination must be used and it is said that there are more than 87,000 possible changes.

**Manufactured by the Walker Ke-Les Lock Company, Chicago, Ill. Price $10.**

## AUTO-SCOPE WINDSHIELD WIPER.

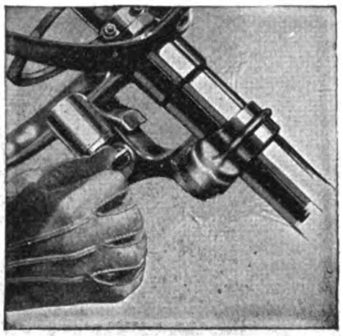
Something new in the way of a Windshield Wiper is being put on the market under the trade name of Auto-Scope. Acting upon the suggestion that both sides of the windshield become clouded by vapor in damp or foggy weather, the manufacturers designed a wiper that cleans both sides of the glass at the same operation.

The inside wiper is made of heavy absorbent felt, yet not so heavy as to cause undue friction and drag. The outside wiper is made of the best grade squeegee rubber, guaranteed not to scratch the glass.

The whole device may be placed either at the top or between the glass sections of the shield, since it requires but 1/16 of an inch clearance. It is said to operate very easily and exerts an even pressure on both sides of the glass.

It is made in three models: The Auto-Scope Junior with no rear wiping member, finished in black enamel; Auto-Scope No. 1 in oxidized finish for both front and rear of glass, and the Auto-Scope No. 2 designed similar to No. 1, but made of brass and nickel plated.

**Manufactured by the White Lock Co., 1241 Michigan Ave., Chicago, Ill. Price, Junior, $1; No. 1, $1.50; No. 2, $2.50.**



## STEERING COLUMN LOCK.

Something radically new in the line of steering column locks is being introduced under the name of the Goodrich Steering Column Lock. This device consists of a three-piece fitting, which fastens to the steering wheel and steering column and locked into place by a Yale lock.

One member of the lock is clamped to the steering column by concealed screws, a second member is fastened to the steering wheel spider by the same means. These two members are left in place permanently, while the third is put into place when it is desired to lock the car. This piece may be carried in the pocket and when in place it is said to be impossible to turn the steering wheel.

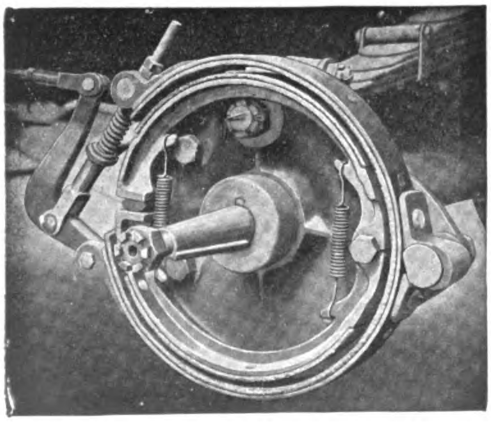
**Manufactured by Goodrich-Lenhart Manufacturing Co., 418 Widener Bldg., Philadelphia, Pa. Write for prices, stating make of car.**

## A-C BRAKE.

To add to the efficiency of the Ford braking system the A-C brakes have been put on the market. These fittings may be attached to the rear axle and require no alteration of the axle or additional cross members. The brake bands are external contracting and are operated through two cables attached to the service brake pedal.

The manufacturers claim that no knowledge of mechanics is necessary to install the fittings, which may be put into place within an hour, using but a wrench as a tool.

**Manufactured by A-C Manufacturing Co., Inc., 2047 W. Chicago Ave., Chicago. Ill. Price, $15. Special proposition to agents.**



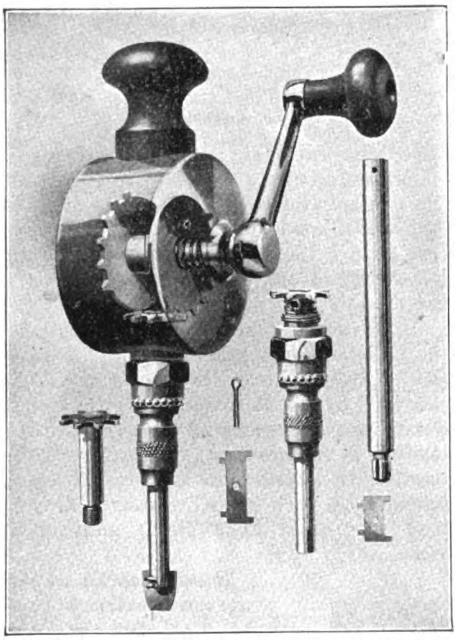
Application of A-C Brake.

## VELVET RECOIL DEADNER.

A new device has just been placed on the market by the makers of the Velvet Shock Absorbers, and is called the Velvet Recoil Deadner. As the name indicates the device is designed to eliminate or deaden the recoil of the springs on an automobile.

As will be seen by reference to the illustration, the cam A is fastened stationary on the pivot bolt B, while the drum revolves on the bolt. The spring C is fastened to the inside of the drum and when the car goes upward the drum revolves on the pivot and the spring gravels up on cam A, gradually stopping the upthrow of the car. A spring on the opposite side of the device winds back the drum and the spring C immediately slides down on the cam as the body of the car returns to normal position.

**Manufactured by the John W. Blackledge Manufacturing Co., 341 East Ohio St., Chicago, Ill. Write for prices, giving name of car.**

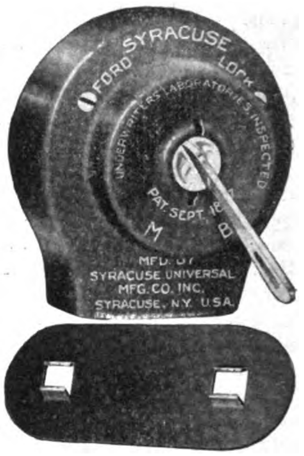


## SIOUX VALVE GRINDER.

The average car owner who grinds his valves but once for every 500 or 600 miles, finds that he is unable to accomplish the job as easily as the repair man who is experienced. He is prone to rotate the valve, and the result is not at all satisfactory. Hence the Sioux Valve Grinder has been designed. This device consists of a handle or crank operated wheel which drives through suitable gears the grinding tool. The gears are so arranged that by a continuous turn of the crank the tool is given a reciprocating motion, always traveling slightly forward in one direction, then in the opposite, until the whole circumference has been made.

With the tool are furnished three special valve head fittings and a special length of shaft for extension purposes.

**Manufactured by Albertson & Co., Sioux City, Ia. Price, $6.**



Syracuse Ford Lock.

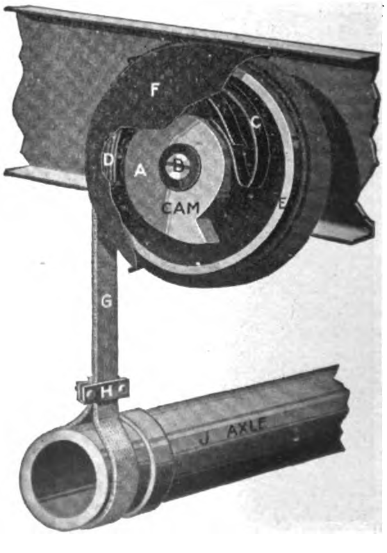
## SYRACUSE FORD LOCK.

A new Ford ignition lock is now being placed on the market which has a novel feature, in that with the lock at "Off" the common contact strip, through which the current must pass in order to get into the coils, is grounded. This the manufacturers claim, absolutely prevents getting a spark to the spark plugs by rewiring, installing a separate battery, or by any other means without a key.

Another novel feature is the method of connecting the coil box with the steering wheel column in forming the "ground." This is done by the ground plate which, after removing the nuts, is slipped over the two which fasten the coil box and steering column to the dash. When the nuts are again screwed on the bolts they force the turned up portions of the plate into the threads of the bolts, making a permanent ground between the coil box and the car frame. The common contact strip is grounded to the coil box only when the car is locked.

The coils are locked into the coil box by wedging, preventing their removal. With each lock are furnished three nickel plated keys.

**Manufactured by Syracuse Universal Manufacturing Co., 320 West Fayette St., Syracuse, N. Y. Price, $2.50.**



Velvet Recoil Deadner.

## TRANSMISSION LININGS.

In the December issue of the Accessory and Garage Journal an editorial appeared giving description of the Advance Cork Insert Transmission Linings for Ford cars. The price quoted of $1 was a typographical error and should have been $3 per set of three.

A brake lining that would engage smoothly without the customary grab or chatter has long been sought by the motorist and such a lining is said to be the cork insert. The cork insert consists of a heavy fabric of great strength, in which is inserted at regular intervals buttons of cork. Cork in itself is an excellent braking material, since it is not affected by oil or moisture of any kind, nor is it appreciably worn by ordinary friction. Alone, however, it soon would crumble away, and so it is inserted in the heavy fabric which keeps it together.

The braking action, as well as the clutching action of this lining, is said to be smooth and positive, the cork exerting an even pressure upon the metal surfaces of the brake or transmission drums. It is put up in sets of three bands for the Ford car transmission.

**Manufactured by Advance Automobile Accessories Corporation, Dept. K., 3-1, 56 E. Randolph St., Chicago, Ill. $3 per set of three.**

## TELL-TALE PISTON RING.

Of late there has been more or less trouble from excess carbon formation and oil escapement into the explosion chamber of gasoline engines. To prevent this excess oil leakage and to decrease liabilities of leakage past the pistons the Tell-Tale Piston Ring has been designed.

This ring is made of a metal which is capable of withstanding a great heat without losing its tension. Each ring is individually cast and retains its scale or resilient strength when finished. The wearing edge is turned and so adapts itself to the cylinder in which it runs.

Around the outside is turned a shallow groove, or wiping chamber, which is designed to collect any surplus oil and allow it to escape into the crank case through vertical channels cut to the groove at intervals. The joint is of the familiar square lap type, in effect two rings, but only one casting.

**Manufactured by Vulcan Machine and Tool Co., St. Louis, Mo. Write for prices.**

ADVANCE
CORK INSERT
TRANSMISSION LININGS FOR FORDS
One Set Will Outwear—
3 of Any Other Kind
"Makes A Great Car Greater"
ADVANCE CORK INSERT TRANSMISSION LINING

Set of Transmission Linings.

## SIGNALING DEVICE.

With the increase of traffic comes the need of some signaling device by which a driver can make known his actions to the drivers of cars behind him. A device has recently been perfected and patented by John L. Gleason of Jamaica Plain, Mass., which seems to solve the problem.

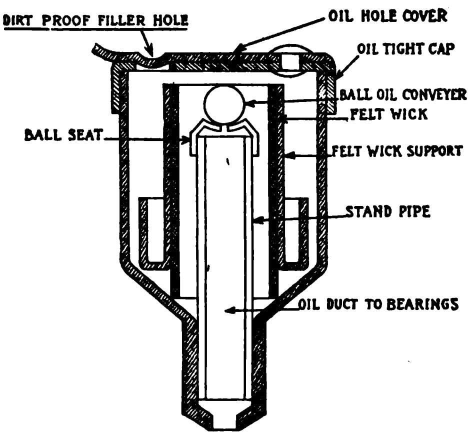
Upon the rear of the car is mounted a box, fitted with three lights and two shutters. The centre light serves as a tail light, while upon each side are lights which under ordinary conditions are covered by the shutters. When the driver wishes to turn to the left or right he pulls a lever, which actuates and operates either the left or right light shutter and indicates to any person or driver at the rear just what to expect from the car ahead.

The closing of the shutters is accomplished by spring devices, while a glass covered opening at the end of the box allows the light beams to illuminate the number plate. The whole device is very simple and said to be very efficient.

Anyone interested in this patent or marketing of the device is requested to write John L. Gleason, Jamaica Plain, Mass., for further particulars.

TELL-TALE
TRADE MARK
PISTON RINGS

Tell-Tale Piston Ring.



SECTION

Cross Sectional View of Lubrik-Oil Cup Above and Exterior View of Same Below.

## LUBRIK-OIL CUP.

A device called the Lubrik-Oil Cup is something distinctively different in the lubricating line. This oil cup consists of an outside steel, sheradized or nickel plated body fitted with a heavy oil tight cap in which is cut a filler hole, protected by a spring cover. In the body is fitted a so-called stand pipe upon the top of which is a ball. Surrounding the stand pipe is a circular shaped wick, supported by a heavy piece of felt. The device is filled with lubricating oil through the hole in the cover and every motion of the car throws the ball against the wick oil feed, which is kept supplied with oil, as long as there is any lubricant in the body, by capillary action.

From the ball the lubricant runs through the stand pipe oil duct into the bearing. Beyond the filling of the oil reservoir every two or three thousand miles, no attention is said to be necessary, the amount of oil necessary being furnished by the wick. The oiler may be applied to any automobile or bearing surface where there is sufficient movement to agitate the ball oil conveyor. A feature of the device is that it functions only while the bearing is in operation.

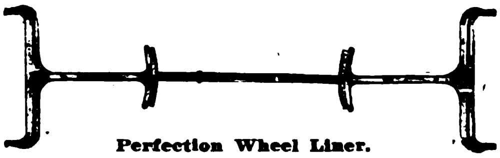
**Manufactured by Warnola Manufacturing Co., 73 Wooster St., New York City. Prices, steel, 50 cents; sherardized, 70 cents; nickel plated, $1.**

## PERFECTION WHEEL LINER.

A device designed for the owner, as well as the garage or repair man, is known as the Perfection Wheel Liner. As every driver realizes, wear on front tires is increased to a great extent by wheels that are out of alignment, so that it is to the interest of the motorist to keep his front wheels in perfect alignment or he will have trouble from tires.

The Perfection Wheel Liner is constructed of cold rolled steel and fitted with two indicating scales and two forks, one on each end. Between the two scales, which indicate in degrees the camber of the wheels, is a third scale, which gives the distance between the ends or sides of the wheels. As can be seen from the illustration the device may be used to get the exact distance between the tops and bottoms of the wheels, at the front or at the rear. Comparisons with measurements taken of the front wheels and similar measurements taken of the rear will indicate any out of alignment that might exist. Spring tension automatically holds the gauge tight against the felloe of each wheel.

**Manufactured by International Motor Products Co., 2023 S. Michigan Ave., Chicago, Ill. Write for price.**



Perfection Wheel Liner.

# *Passenger Cars and Car Makers for 1918*

## Listed Alphabetically with Addresses of the Manufacturers

**ABBOTT,** Abbott Corp., Cleveland, O.
**ALLEN,** Allen Motor Car Co., Fostoria, O.
**AMERICAN,** American Motors Corp., Plainfield, N. J.
**AMERICAN BEAUTY,** Pan American Motors Co., Chicago, Ill.
**ANDERSON,** Anderson Motor Co., Rock Hill, S. C.
**ANDERSON ELECTRIC,** Anderson Electric Car Co., Detroit, Mich.
**APPERSON,** Apperson Brothers Auto Co., Kokomo, Ind.
**AUBURN,** Auburn Automobile Co., Auburn, Ind.
**AUSTIN,** Austin Automobile Co., Grand Rapids, Mich.
**BAKER, R. & L.,** Baker, R. & L., Co., Cleveland, O.
**BELL,** Bell Motor Car Co., York, Pa.
**BIDDLE,** Biddle Motor Car Co. Philadelphia, Pa.
**BIRCH,** Birch Motor Cars, Chicago, Ill.
**BOUR-DAVIS,** Shadbourne Combined Motors Co., Chicago, Ill.
**BREWSTER,** Brewster & Co., Long Island City, N. Y.
**BRISCOE,** Briscoe Motor Corp., Jackson, Mich.
**BUICK,** Buick Motor Co., Flint, Mich.
**BUSH,** Bush Motor Co., Chicago, Ill.

**CADILLAC,** Cadillac Motor Car Co., Detroit, Mich.
**CAMPBELL,** Campbell Motor Car Co., Kingston, N. Y.
**CASE,** J. I. Case T. M. Co., Racine, Wis.
**CHALMERS,** Chalmers Motor Co., Detroit, Mich.
**CHANDLER,** Chandler Motor Car Co., Cleveland, O.
**CHEVROLET,** Chevrolet Motor Co., Flint, Mich.
**COLE,** Cole Motor Car Co., Indianapolis, Ind.
**COLUMBIA,** Columbia Motors Co., Detroit, Mich.
**COMET,** Comet Automobile Co., Decatur, Ill.
**COMMONEALTH ULTRA,** Commonwealth Motors Co., Chicago, Ill.
**CRAWFORD,** Crawford Automobile Co., Hagerstown, Md.
**CROW-ELKHART,** Crow-Elkhart Motor Car Co., Elkhart, Ind.
**CRUISER,** Cruiser Motor Car Co., Madison, Wis.
**CUNNINGHAM,** J. Cunningham Son & Co., Rochester, N. Y.

**DANIELS,** Daniels Motor Car Co., Reading, Pa.
**DAVIS, G. W.,** Davis Motor Car Co., Richmond, Ind.
**DETROIT ELECTRIC,** Anderson Electric Car Co., Detroit, Mich.
**DISPATCH,** Dispatch Motor Car Co., Minneapolis, Minn.
**DIXIE FLYER,** Dixie Motor Car Co., Louisville, Ky.
**DOBLE,** Doble-Detroit Steam Motors Co., Detroit, Mich.
**DODGE BROTHERS,** Dodge Brothers, Detroit, Mich.
**DORRIS,** Dorris Motor Car Co., St. Louis, Mo.
**DORT,** Dort Motor Car Co., Flint, Mich.
**DOUGLAS,** Douglas Motors Corp., Omaha, Neb.
**DUNN,** Dunn Motor Works, Ogdensburg, N. Y.

**EAGLE,** Eagle-Macomber Motor Car Co., Sandusky, O.
**ECONOMY,** Economy Motor Car Co., Tiffin, O.
**ELCAR,** Elkhart Carriage and Motor Car Co., Elkhart, Ind.
**ELGIN,** Elgin Motor Car Corp., Chicago, Ill.
**EMPIRE,** Empire Auto Co., Indianapolis, Ind.
**ERIE,** Erie Motor Car Co., Painesville, O.

**FAGEOL,** Fageol Motors Co., Oakland, Cal.
**FIAT,** F. I. A. T. Co., Poughkeepsie, N. Y.
**FORD,** Ford Motor Co, Detroit, Mich.
**FRANKLIN,** H. H. Franklin Mfg. Co., Syracuse, N. Y.
**FRITCHLE,** Fritchle Electric Co., Denver, Col.
**FRONTMOBILE,** Camden Motors Corp., Camden, N. J.
**F. R. P.,** F. R. Porter Co., Port Jefferson, N. Y.

**GERONIMO,** Geronimo Motor Co., Enid, Okla.
**GHENT,** Ghent Motor Co., Ottawa, Ill.
**GLIDE,** Bartholomew Co., Peoria, Ill.
**GRANT,** Grant Motor Car Corp., Cleveland, O.

**HACKETT,** Hackett Motor Car Co., Jackson, Mich.
**HAL,** Hal Motor Car Co., Cleveland, O.
**HALLADAY,** Barley Motor Car Co., Streator, Ill.
**HARROUN,** Harroun Motors Corp., Detroit, Mich.
**HARVARD,** Harvard-Pioneer Motor Car Co., Troy, N. Y.
**HASSLER MOTOR CO.,** Indianapolis, Ind.
**HATFIELD,** Cortland Cart and Carriage Co., Sidney, N. Y.
**HAYNES,** Haynes Automobile Co., Kokomo, Ind.
**HESELTINE,** Heseltine Corp., New York, N. Y.
**HOLLIER,** Lewis Spring and Axle Co., Chelsea, Mich.
**HOLMES,** Holmes Automobile Co., Canton, O.
**HOMER-LAUGHLIN,** Homer-Laughlin Eng. Co., Los Angeles, Cal.
**HUDSON,** Hudson Motor Car Co., Detroit, Mich.
**HUPMOBILE,** Hupp Motor Car Co., Detroit, Mich.
**HUPP-YEATS ELECTRIC CAR CO.,** Detroit, Mich.

**INTER-STATE,** Inter-State Motor Co., Muncie, Ind.

**JACKSON,** Jackson Automobile Co., Jackson, Mich.
**JONES,** Jones Motor Car Co., Wichita, Kan.
**JORDAN,** Jordan Motor Car Co., Cleveland, O.

**KING,** King Motor Car Co., Detroit, Mich.
**KISSELKAR,** Kissel Motor Car Co., Hartford, Wis.
**KLINE,** Kline Car Corp., Richmond, Va.
**KNIGHT SPECIAL,** Watson & Stoeckel, 251 West 57th St., New York City.

**LAMBERT,** Buckeye Mfg. Co., Anderson, Ind.
**LAUREL,** Laurel Motor Car Co., Richmond, Ind.
**LENOX,** Lenox Motor Car Co., Boston, Mass.
**LEXINGTON,** Lexington-Howard Co., Connersville, Ind.
**LIBERTY,** Liberty Motor Car Co., Detroit, Mich.
**LOCOMOBILE,** Locomobile Co. of America, Bridgeport, Conn.
**LOZIER,** Lozier Motor Co., Detroit, Mich.
**LUVERNE,** Luverne Automobile Co., Luverne, Minn.

**MCFARLAN,** McFarlan Motor Co., Connersville, Ind.
**MACON,** Macon Automobile Co., Macon, Ga.
**MADISON,** Madison Motors Co., Anderson, Ind.
**MAIBOHM,** Maibohm Motors Co., Racine, Wis.
**MAJESTIC,** Majestic Motor Co., New York, N. Y.
**MARMON,** Nordyke & Marmon Co., Indianapolis, Ind.
**MAXWELL,** Maxwell Motor Co., Detroit, Mich.
**MERCER,** Mercer Automobile Co., Trenton, N. J.
**METZ,** Metz Co., Waltham, Mass.
**MILBURN,** Milburn Wagon Co., Toledo, O.
**MITCHELL,** Mitchell Motors Co., Racine, Wis.
**MOLINE-KNIGHT,** Moline Automobile Co., East Moline, Ill.
**MONITOR,** Monitor Motor Car Co., Columbus, O.
**MONROE,** Monroe Motor Co., Pontiac, Mich.
**MOON,** Moon Motor Car Co., St. Louis, Mo.
**MOORE,** Moore Motor Co., Minneapolis, Minn.
**MURRAY,** Murray Motor Car Co., Pittsburgh, Pa.

**NASH,** Nash Motors Co., Kenosha, Wis.
**NATIONAL,** National Motor Car and Vehicle Corp., Indianapolis, Ind.
**NAPOLEON,** Traverse City Motor Car Co., Traverse City, Mich.
**NELSON,** E. A. Nelson, Detroit, Mich.
**NORWALK,** Norwalk Motor Car Co., Martinsburg, W. Va.

**OAKLAND,** Oakland Motor Car Co., Pontiac, Mich.
**OHIO ELECTRIC,** Ohio Electric Car Co., Toledo, O.
**OLDSMOBILE,** Olds Motor Works, Lansing, Mich.
**OLYMPIAN,** Olympian Motors Co., Pontiac, Mich.
**OVERLAND,** Willys-Overland Co., Toledo, O.
**OWEN-MAGNETIC,** Baker R. & L. Co., Cleveland, O.

**PACKARD,** Packard Motor Car Co., Detroit, Mich.
**PAIGE,** Paige-Detroit Motor Car Co., Detroit, Mich.
**PAN AMERICAN,** Pan American Motors Co., Chicago, Ill.
**PAN,** Pan Motor Co., St. Cloud, Minn.
**PARTIN-PALMER,** Commonwealth Motors Co., Chicago, Ill.
**PATERSON,** W. A. Paterson Co., Flint, Mich.
**PEERLESS,** Peerless Motor Car Co., Cleveland, O.
**PHIANNA,** Phianna Motors Co., Newark, N. J.
**PIERCE-ARROW,** Pierce-Arrow Motor Car Corp., Buffalo, N. Y.
**PILGRIM,** Pilgrim Motor Car Co., Detroit, Mich.
**PILOT,** Pilot Motor Car Co., Richmond, Ind.
**PREMIER,** Premier Motor Corp., Indianapolis, Ind.
**PRINCESS,** Princess Motor Car Corp., Detroit, Mich.

**REGAL,** Regal Motor Car Co., Detroit, Mich.
**REO,** Reo Motor Car Co., Lansing, Mich.
**ROAMER,** Barley Motor Car Co., Streator, Ill.

**SAYERS,** Sayers Scovill Co., Cincinnati, O.
**SAXON,** Saxon Motor Car Corp., Detroit, Mich.
**SCRIPPS-BOOTH,** Scripps-Booth Corp., Detroit, Mich.
**SENECA,** Seneca Motor Car Co., Fostoria, O.
**SIMPLEX,** Simplex Auto Co., New Brunswick, N. J.

**SINGER,** Singer Motor Co., New York, N. Y.
**STANDARD,** Standard Steel Car Co, Pittsburgh, Pa.
**STANLEY,** Stanley Motor Carriage Co., Newton, Mass.
**STEARNS-KNIGHT,** F. B. Stearns Co., Cleveland, O.
**S. S. E.,** S. S. E. Co., Philadelphia, Pa.
**STEINMETZ ELECTRIC,** Day Electric Corp., New York, N. Y.
**STEPHENS,** Stephens Motor Branch Moline Plow Co., Moline, Ill.
**STUDEBAKER,** Studebaker Corp., South Bend, Ind.
**STUTZ,** Stutz Motor Car Co., Indianapolis, Ind.

**TEMPLAR,** Templar Motors Corp., Cleveland, O.
**TRUMBULL,** Trumbull Motor Car Co., Philadelphia, Pa.

**VELIE,** Velie Motors Corp., Moline, Ill.

**WESTCOTT,** Westcott Motor Car Co., Springfield, O.
**WHITE,** White Motor Co., Cleveland, O.
**WILLYS-KNIGHT,** Willys-Overland Co., Toledo, O.
**WINTON,** Winton Co., Cleveland, O.

**WOODS DUAL POWER,** Woods Motor Vehicle Co., 25th St., Chicago, Ill.
**WOLVERINE,** Wolverine Motors, Inc., Kalamazoo, Mich.

**YALE,** Saginaw Motor Car Co., Saginaw, Mich.

# *Meaning of Terms Used in Specifications*

**Horsepower** (S. A. E.)—Horsepower in each instance is according to the rating of the Society of Automobile Engineers, whose formula has been generally accepted as standard and consists of multiplying the square of the diameter of the cylinder bore in inches by the number of cylinders and dividing by the constant 2.5. The solution of this formula gives the horsepower at 1000 feet per minute piston speed and should not be taken to indicate the maximum power of which an engine may be capable.

**Piston Displacement**—This designation is intended to express the space through which the pistons sweep in the cylinder during the completion of one of their strokes. This is determined by multiplying the square of the bore in inches by the constant .7854, and this result by the number of cylinders and finally that sum by the length of the stroke in inches.

**Cylinders, Shape and Cast**—This refers to the number of cylinders, the general contour of the engine and how the cylinders are grouped. The shapes of the engines are expressed as L-head, T-head, I-head and V. In the L-head type the valves are all on one side; in the T-head, the inlet valves are on one side and the exhaust on the other; in the I-head, the valves are in the head, or there may be one set in the head and another on one side. In the V shaped engine the valves may be in the head or on the sides, either in the V or on the outside, or a combination of these locations. The grouping of the cylinders is expressed either by block (cylinders all integral), separately (each cylinder individual), 2s (in pairs), 3s (in groups of three each, 4s (an eight-cylinder engine on two blocks of four each), 6s (a 12-cylinder engine with two blocks of six cylinders each).

**Type Camshaft Drive**—Under this head appears spur, helical and chain, the first referring to a plain spur gear driving the camshaft, the second a helically cut gear and the third a silent chain drive.

**Cooling System**—Thermo-syphon systems, or natural flow methods, require no circulating pump. In the pump system a centrifugal pump generally is used to force the water through the cooling installation.

**Lubrication System**—Three systems are shown. The splash system consists of distributing the oil in the crank case by means of dips on the connecting rod ends. In the force feed the oil is pumped to the working parts through leads. The force feed and splash is a combination of the two other methods.

**Ignition Type**—Four systems are mentioned. The single has one source of current and one set of spark plugs. The double includes magneto and battery and two sets of plugs, of which only one set operates while the engine is running. The dual has battery and magneto and one set of plugs. Two-point ignition has double-distributor magneto and two sets of plugs which operate simultaneously

**Fuel Feed**—In the gravity system the gasoline flows naturally from a tank in the cowl, or one under the seat, to the carburetor. In the vacuum system engine suction in an auxiliary tank connected with the carburetor and a tank at the rear draws the fuel to the vacuum tank from which it flows by gravity to the carburetor. In the pressure system the fuel is forced by air pressure from the rear tank direct to the carburetor.

## *What the Abbreviations Indicate.*

**SHAPE:** I, I-head; L, L-head; T. T-head; V, like letter V.

**CAST:** Block, cylinders integral; Sep., separately; 2s, in pairs; 3s, in threes; 4s, in two blocks of four each; 6s, in two blocks of six each.

**MAKE OF ENGINE:** G. B. & S., Golden, Belknap & Schwarz; H. Laughlin, Homer-Laughlin; H.-Spill., Herschell-Spillman; Mol.-Knight, Moline-Knight; Tur. & Moore, Turner & Moore; Woods-Mil., Woods-Milwaukee.

**VALVES:** Inside, on the inner sides of the V; Outside, on the outer sides of the V; R. & H., right side and head; R. & L., right and left sides; Sleeve, Knight type of engine.

**CLUTCH:** B. & B., Borg & Beck; B. & L., Brown & Lipe; Brew., Brewster.

**COOLING:** Ther.-Syp., thermo-syphon.

**LUBRICATION:** Force F., force feed; F. F. & Spl., force feed and splash.

**IGNITION MAKE:** At. Kent., Atwater Kent; Conn., Connecticut; D.-Bijur, Delco and Bijur; Eise., Eisemann; Split., Splitdorf; West., Westinghouse; West., B., Westinghouse and Bosch.

**IGNITION CONTROL:** Auto., automatic; Hand, manual; H. & A., hand and automatic.

**CARBURETOR:** A. W. T., American Watch & Tool Co.; Hol.-Kgn., Holley & Kingston.

**STARTING AND LIGHTING.** Heinze-Spring., Heinze-Springfield; Pil. or Auto L., Pilliod or Auto-Lite; Stud.-Wagner, Studebaker-Wagner; West., Westinghouse; U, S. L., United States Lighting; Ward-Leon., Ward-Leonard.

**GEARSET:** Plan-Unit, M., planetary, in unit with engine; Selec.-Amid., selective, amidships; S-Unit, M., selective, in unit with engine; S-Unit, X, selective, in unit with rear axle.

**GEARSET MAKE:** Brew., Brewster; Det., Detroit; Dur., Durston; G. L., Grant-Lees; M., Mech., Mechanics Machine Co.; W., War., Warner.

**TIRES:** F. & R., front and rear wheels carry same size tires; colon between figures indicates sizes for two models; comma between figures indicates sizes of rear and front wheels on one model.

**SPRINGS:** Double Canti., double cantilever; ½ Ell. Cant., semi-elliptic cantilever.

**AXLES:** Type, F. F., full floating. Make, A. B. B., American Ball Bearing; Colum., Columbia; Salis., Salisbury; W. M., Weston-Mott; W. W., Walker-Weiss.

**BEARINGS:** B. & R., Ball and roller; C.& C., cup and cone. Make, N. D., New Departure.

**Type of Clutch**—Under this classification disc includes single and multiple plate types and those that run either in oil or dry. D. D. indicates dry disc. The cone type is familiar without explanation.

**Type of Gearset**—Selective refers to the type in which any speed is reached direct. The planetary system is distinctive because when in second speed the whole gearset turns as a unit, while the internal gears do not revolve around each other. In the progressive type it is necessary first to pass through first speed to reach higher ones. Friction drive is by a friction disc pressing against a driven disc attached to a shaft that turns the wheels. Unit with motor indicates that the gearset and clutch housings are integral with the engine—a unit power plant. Unit with rear axle means the gearset is integral with the axle housing, while amidships shows that the gearset is midway between the axle and engine.

**Drive Through**—This refers to whether there is a torque tube surrounding the propeller shaft, or a torque arm placed along side the shaft from the differential to a frame cross member, while springs refer to the Hotchkiss drive in which propulsion is through the rear springs.

**Type of Rear Axle**—In the full floating type the weight is carried on the axle housing and the axle is flexibly attached to the wheels. The ¾ floating is similar to the full floating except that the axle is permanently attached to the wheels. In the ½ floating the bearings are in the axle housing and the axle shaft not only turns the wheels, but helps support the load. The dead type is found only in cars driven by chains, the axle being stationary.

**Direct Drive Ratio**—The relation of the speed of the crankshaft to that of the wheels on high gear is the reference here; in other words, if the engine turns over three times to one revolution of the rear wheels on direct then the ratio is three to one.

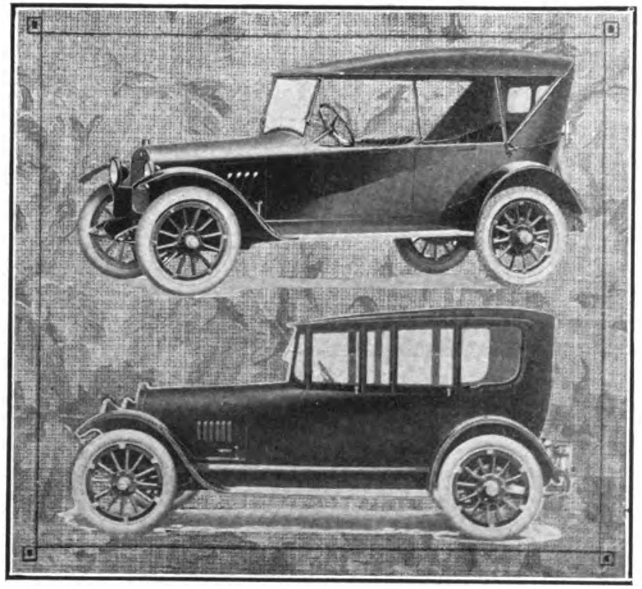
**Rear Springs**—Elliptic springs take their names from their shapes. The elliptic has the form of a full ellipse; in the ¾ elliptic half of the upper member is missing; in the ½ elliptic, simply the lower portion is used. The cantilever type appears to be the ½ elliptic turned upside down. Transverse types are usually of the ½ elliptic type placed across the rear of the car. The platform type has the ½ elliptic on the sides and another transversely mounted and connected with the side members.

**Tabular Arrangement and Special Notes**—Cars on the pages following are divided into six classes, viz.: 4-cylinder cars, 6-cylinder cars, 8-cylinder cars, 12-cylinder cars, constituting the gasoline car sections, electric cars and steam cars. Under these heads, in the order given, the cars are arranged in alphabetical order. A single tire size indicates the same sized tire front and rear. **Prices:** The price quoted in the third line of each specification is usually for the touring car model, unless otherwise indicated.

# FOUR-CYLINDER GASOLINE PASSENGER CAR MODELS FOR 1918.

General Price Lists, Data on Seating Capacities and Body Types Are Given in the Buyers' Index, Pages 42-46.

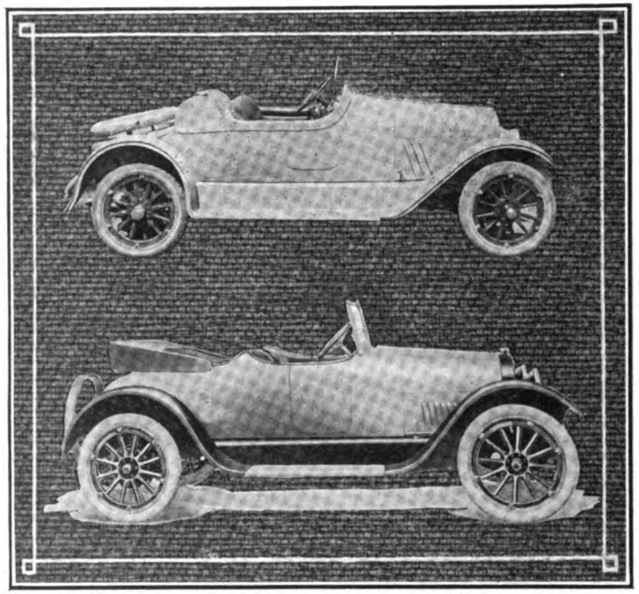
| Name of Car | Allen | Bell | Bell | Biddle | Birch | Brewster |
|---|---|---|---|---|---|---|
| No. or Name of Model | Series 41 | Special | 18 | H | Super Four | One |
| Price | $1095 | $1145 | $995 | $2650 | $895 | $5500 |
| Bore and Stroke | 3.75x5.00 | 3.75x5.00 | 3.75x4.50 | 3.750x5.125 | 3.50x5.00 | 4.00x5.50 |
| Horsepower (S. A. E.) | 22.50 | 22.50 | 22.50 | 22.50 | 19.60 | 25.60 |
| Piston Displacement | 221.0 | 220.0 | 187.0 | 226.4 | 192.0 | 276.0 |
| Cylinders, Shape, Cast | 4-L-Block | 4-L-Block | 4-L-Block | 4-L-Block | 4-L-Block | 4-L-Block |
| Who Makes Engine | Allen | Continental | G. B. S. | Buda | Lycoming | Brewster |
| Location of Valves | Right | Right | Left | Right | Left | Sleeve |
| Type of Camshaft Drive | Helical gear | Helical | Chain | Helical | Helical | Chain |
| Type of Cooling System | Ther.-Syp. | Ther.-Syp. | Ther.-Syp. | Ther.-Syp. | Ther.-Syp. | Pump |
| Lubrication System | Force, splash | F. F., Spl. | F. F., Spl. | F. F., Spl. | Splash | Force |
| Type of Pump | Plunger | Plunger | Plunger | Gear | ...... | Gravity |
| Ignition System Type | Single | Single | Single | Single | Connecticut | Magneto |
| Make and Control | Conn., hand | At. Kent, hand | At. Kent | Dixie, hand | Connecticut | Bosch, hand |
| Make of Carburetor | Stromberg | Zenith | Zenith | Zenith | Carter | Zenith |
| Method of Fuel Feed | Vacuum | Vacuum | Vacuum | Vacuum | Vacuum | Vacuum |
| Starting System Make | Auto-Lite | Dyneto | Dyneto | Gray & Davis | Dyneto | U. S. L. |
| Light. Sys., Make, Volt | Auto-Lite, 6 | Dyneto, 6 | Dyneto, 6 | Gray & Davis | Dyneto, 6 | U. S. L., 12 |
| Type, Make of Clutch | Disc., B. & B. | Disc., B. & B. | Disc, B. & B. | Disc | Disc | Cone, Brewster |
| Type, Make of Gearset | S-Unit, M | S-Unit, C | S-Unit | S-Unit, M | S-Unit, M | S.-amid., Brew. |
| Speed Ratios | Three | Three | Three | Four | Three | Three |
| Drive Through | Springs | Springs | Springs | Springs | Springs | Torque |
| Type, Make Rear Axle | Float., Adams | Float., Adams | Float., Adams | ¾ floating | Full floating | F. F., Brew. |
| Direct Drive Ratio | 4.46-1 | 4.50-1 | 4.50-1 | 4.00-1 | 4.25-1 | 4.25-1 |
| Wheelbase | 112 in. | 114 in. | 114 in. | 122 in. | 114 in. | 125 in. |
| Sizes of Tires | 32x3½, 34x3½ | 32x3½ | 32x3½ | 32x4 F. & R. | 32x3½ | 34x4½ |
| Wheels (Wood or Wire) | Wood | Wood | Wood | Wire | Optional | Wood |
| Type of Rear Springs | ½ elliptic | ¾ elliptic | ¾ elliptic | ¾ elliptic | ¾ elliptic | Cantilever |
| Drive and Control | Left, centre | Left, centre | Left, centre | Left, centre | Left, centre | Shaft |
| Type Gearset Bearings | S. K. F., ball | Ball | Ball | Ball | Ball | Ball |
| Rear Axle Bearings | Ball | Roller | Roller | B. & R. | Roller | Roller |
| Front Axle Bearings | Roller | Ball | Ball | Ball | Ball | Roller |
| No. Eng. Main Bearings | Two | Three | Three | Three | Two | Three |



Above, Hupmobile; Below, Auburn Convertible Sedan.

| Name of Car | Briscoe | Buick | Campbell | Chevrolet | Chevrolet | Commonwealth | Crow-Elkhart | Dispatch | Dixie Flyer | Dodge Bros. |
|---|---|---|---|---|---|---|---|---|---|---|
| No. or Name of Model | B 4-24 | E-34 | Four | Four-Ninety | F A | Ultra-4-Forty | C. E. | G Chassis | L S-35 | ...... |
| Price | $725 | $880 | $835 | $635, $1060 | $935, $1475 | $995 | $935 | $1250 | $995 | $885 |
| Bore and Stroke | 3.187x5.125 | 3.375x4.750 | 3.875x4.000 | 3.687x4.000 | 3.687x5.250 | 3.50x5.00 | 3.50x5.00 | 3.75x5.00 | 3.25x5.00 | 3.875x4.500 |
| Horsepower (S. A. E.) | 16.25 | 18.23 | 24.14 | 21.70 | 21.70 | 19.80 | 19.60 | 32.50 | 16.90 | 24.14 |
| Piston Displacement | 163.5 | 170.0 | 188.7 | 170.88 | 224.0 | 192.4 | 192.4 | 220.9 | 165.9 | 212.3 |
| Cylinders, Shape, Cast | 4-L-Block | 4-I-Block | 4-L-Block | 4-I-Block | 4-I-Block | 4-L-Block | 4-L-Block | 4-L-Block | 4-L-Block | 4-L-Block |
| Who Makes Engine | Briscoe | Buick | Metz | Own | Own | Lycoming | Own | Wisconsin | Lycoming | Dodge Bros. |
| Location of Valves | Right | Head | Right | Head | Head | Side by side | Right | Left | Right | Right |
| Type of Camshaft Drive | Helical | Helical | Gear | Helical | Helical | Gear | Helical | Helical | Helical | Helical |
| Type of Cooling System | Ther.-Syp. | Pump | Ther.-Syp. | Pump | Pump | Ther.-Syp. | Ther.-Syp. | Ther.-Syp. | Ther.-Syp. | Pump |
| Lubrication System | F. F., Spl. | F. F., Spl. | Spl., pump | Splash | Splash | Spl., pump | Splash | Force F. | F. F., Spl. | F. F., Spl. |
| Type of Pump | Plunger | Plunger | Centrifugal | Gear | Gear | Plunger | Plunger | Gear | Plunger | Eccentric |
| Ignition System Type | Single | Single | At. Kent | Single | Single | Single | Single | Single | Single | Single |
| Make and Control | Conn., hand | Delco, H. & A. | At. Kent, hand | Remy, hand | Remy, hand | At. Kent, hand | Conn., hand | Bosch, hand | Conn., hand | Delco, auto. |
| Make of Carburetor | Buick-Carter | Marvel | A. W. & T. | Zenith | Zenith | Carter | Zenith | Rayfield | Carter | Stewart |
| Method of Fuel Feed | Gravity | Vacuum | Vacuum | Gravity | Vacuum | Vacuum | Gravity | Gravity | Vacuum | Vacuum |
| Starting System Make | Auto-Lite | Delco | Auto-Lite | Elec. Auto-Lite | Elec. Auto-Lite | Dyneto | Dyneto | U. S. L. | Dyneto | North East |
| Light. Sys., Make, Volt | Auto-Lite | Delco, 6 | Auto-Lite, 6 | Auto-Lite 6 | Auto-Lite, 6 | Dyneto, 6 | Dyneto | U. S. L. | Dyneto | North East |
| Type, Make of Clutch | Cone | D. D. | Disc, Muncie | Cone, own | Cone, own | Disc., Mech. | Disc | Special | Disc | Disc |
| Type, Make of Gearset | S-Unit, X | Selective | Sel., Muncie | S-Unit, M, own | S-Unit, M, own | S-Unit, M | S-Unit, M | Special | S-Unit, M | S-Unit, M |
| Speed Ratios | Three | Three | Four | Three | Three | Three | Three | Four | Three | Three |
| Drive Through | Torque rod | Springs | Springs | Springs | Springs | Springs | Torque tube | Radius rod | Torque tube | Springs |
| Type, Make Rear Axle | ½ floating | Floating | Salisbury | Own | Own | Peru, F. F. | Full floating | Dead | Full floating | Full floating |
| Direct Drive Ratio | 4.23-1 | 4.08-1 | 4.25-1 | 3.65-1 | 4.25-1 | 4.25-1 | 4.00-1 | 3.12-1 | 4.75-1 | 4.166-1 |
| Wheelbase | 104 in. | 106 in. | 110 in. | 102 in. | 108 in. | 112 in. | 114½ in. | 120 in. | 112 in. | 114 in. |
| Sizes of Tires | 30x3½, F. & R. | 31x4 | 30x3½ | 30x3½ | 33x4 | 32x3½ | 32x3½, F. & R. | 26x3½, F. & R. | 32x3½, F. & R. | 32x3½, F. & R. |
| Wheels (Wood or Wire) | Wood | Wood | Wood | Wood | Wood | Wood | Wood | Wood | Wood | Wood |
| Type of Rear Springs | Elliptic | ½ elliptic | ½ elliptic | ½ cantilever | ½ cantilever | ¾ elliptic | ¾ elliptic | Elliptic | ¾ elliptic | ¾ elliptic |
| Drive and Control | Left, centre | Left, centre | Left, centre | Left, centre | Left, centre | ...... | Left, centre | Left, right | Left, centre | Left, centre |
| Type Gearset Bearings | B. & R. | B. & R. | Ball | Ball, plain | Ball, plain | N. D., double | Roller | Ball | Ball | Ball |
| Rear Axle Bearings | B. & R. | B. & R. | B. & R. | Roller | Roller | Ball | Roller | Ball | Roller | Roller |
| Front Axle Bearings | Ball | Ball | Ball | Ball | Ball | Two | Ball | Ball | Ball | Roller |
| No. Eng. Main Bearings | Two | Three | Three | Three | Three | Roller | Two | Three | Two | Three |

| Name of Car | Dort | Economy | Elcar | Empire 4 | Erie | Fiat | Ford | F. R. P. | Hackett | Harroun |
|---|---|---|---|---|---|---|---|---|---|---|
| No. or Name of Model | 8 and 11 | 4-36 | D 4, E 4, G 4 | 50-51 | 33-34 | 55-E18 | T | 45-A, 45-B | Ultra-Four | AA-1 |
| Price | ...... | $1040 | $1095, $1625 | $1125, $1165 | $975 | $5500 | ...... | $7000 | $960 | $785 |
| Bore and Stroke | 3.50x5.00 | 3.75x4.25 | 3.50x5.00 | 3.875x5.000 | 3.75x4.25 | 5.125x6.750 | 3.75x4.00 | 4.60x6.75 | 3.75x4.25 | 3.25x5.25 |
| Horsepower (S. A. E.) | 19.60 | 22.50 | 19.60 | 24.60 | 22.50 | 42.03 | 22.50 | 33.80 | 22.50 | 16.90 |
| Piston Displacement | 192.4 | 188.0 | 192.4 | 236.0 | ...... | 557.0 | 176.7 | 448.9 | 187.7 | 174.2 |
| Cylinders, Shape, Cast | 4-L-Block | 4-L-Singly | 4-L-Block | 4-T-Block | 4-L-Block | 4-L-Block | 4-L-Block | 4-I-Block | 4-L-Block | 4-I-Block |
| Who Makes Engine | Dort | G. B. & S. | Lycoming | Teetor Hart. | G. B. & S. | Fiat | Ford | Porter | G. B. & S. | Harroun |
| Location of Valves | Right | Side | Right | T head | Left | Left | Right | Head | Right | Head |
| Type of Camshaft Drive | Helical | Chain | Helical | Built up | Chain | Helical | Spur | Worm | Chain | Helical gear |
| Type of Cooling System | Ther.-Syp. | Ther.-Syp. | Ther.-Syp. | Ther.-Syp. | Ther.-Syp. | Pump | Ther.-Syp. | Pump | Ther.-Syp. | Ther.-Syp. |
| Lubrication System | Cir. splash | F. F., Spl. | F. F., Spl. | Splash | F. F., Spl. | Force F. | Splash | F. F., Spl. | F. F. | F. F., Spl. |
| Type of Pump | Plunger | ...... | Plunger | ...... | Plunger | Gear | ...... | Plunger | Plunger | Plunger |
| Ignition System Type | Conn., battery | Single | Single | Battery | Single | Dual | Single | Single, 2 P. I. | Single | Single |
| Make and Control | Conn., hand | Conn., hand | At. Kent, hand | Conn. | Dixie, hand | Bosch, hand | Ford, hand | Bosch, hand | Conn., hand | At. Kent, hand |
| Make of Carburetor | Carter | Schebler | Carter | Stromberg | Schebler | Zenith-Fiat | Hol.-Kgn. | Longuemare | Buick | Stromberg |
| Method of Fuel Feed | Gravity | Vacuum | Vacuum | Vacuum | Gravity | Pressure | Gravity | Pressure | Vacuum | Vacuum |
| Starting System Make | Westinghouse | Dyneto | Dyneto | Elec. Auto-Lite | Dyneto | West. | None | Bosch | Dyneto | Remy |
| Light. Sys., Make, Volt | West., 6 | Dyneto, 6 | Dyneto, 6 | E. Auto-Lite, 6 | Dyneto, 6 | West., 6 | Ford | Bosch | Dyneto, 6 | Remy, 6 |
| Type, Make of Clutch | Cone, Dort | D. D. | Disc., Mech. | Disc, B. & B. | Disc, G. B. & S. | Disc | Disc | Cone | Disc | Cone, Harroun |
| Type, Make of Gearset | S-Unit, M | Selective | S-Unit, M | S.-U., M, Mech. | S-Unit, M, G. L. | Sel.-Amid. | Plan.-Unit, M | Sel.-Amid. | Sel., G. & L. | S-Unit, M, M. |
| Speed Ratios | Three | Three | Three | Three | Three | Four | Two | Four | Three | Three |
| Drive Through | Springs | Springs | Springs | Springs | Torque rod | Torque tube | Torque tube | Springs | Springs | Springs |
| Type, Make Rear Axle | W. W., ¾ float. | ...... | F. F., Salis. | Peru, ¾ float. | ¾ float., Salis. | ½ floating | ½ floating | Full floating | W. W., ½ float. | ¾ float., own |
| Direct Drive Ratio | 4.07-1 | 4.08-1 | 4.50-1 | 4.33-1 | 4.00-1 | 2.70-1 | 3.63-1 | 2.75-1, 3.00-1 | 4.00-1 | 4.00-1 |
| Wheelbase | 105 in. | 115 in. | 116 in. | 115 in. | 118 in. | 140 in. | 100 in. | 110, 140 in. | 112 in. | 105 in. |
| Sizes of Tires | 30x3½ | 32x3½ | 32x3½, 33x4 | 33x4 | 33x4, F. & R. | 35x5, F. & R. | 30x3, 30x3½ | 33x4½, 36x5 | 32x3½ | 30x3½ |
| Wheels (Wood or Wire) | Optional | Wood | Wood | Wood | Wood | Wood | Wood | Wire | Wood | Wood |
| Type of Rear Springs | Cantilever | ½ elliptic | ½ elliptic | ½ elliptic | ¾ elliptic | ¼ elliptic | Transverse | ½ elliptic | ¾ elliptic | Float. canti. |
| Drive and Control | Left, centre | Left, centre | Left, centre | Left, centre | Left, centre | Right | Left | Right | Left, centre | Right, centre |
| Type Gearset Bearings | Ball | Ball | Ball | Ball, plain | Ball, plain | Ball | Plain | Ball | Roller | Ball |
| Rear Axle Bearings | B. & R. | Roller | Roller | B. & R. | Roller | Ball | Roller | Ball | Roller | B. & R. |
| Front Axle Bearings | Ball | Ball | Roller | Ball | Ball | Ball | Ball | Ball | Ball | Roller |
| No. Eng. Main Bearings | Two | Three | Two | Three | Three | Three | Three | Three | Three | Three |



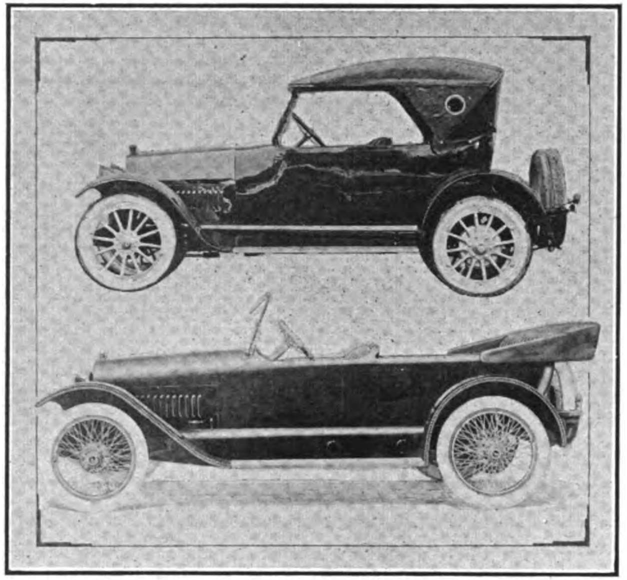
Above, American Speedster; Below, Chevrolet Roadster.

| Name of Car | Harvard | Hatfield | Hupmobile | Inter-State | Knight Special | Laurel |
|---|---|---|---|---|---|---|
| No. or Name of Model | 4-25 | A, H & I. | R | T, TR, TR4 | Model B | 55 |
| Price | $750, $985 | ...... | $1250 | ...... | $5000 | $1095 |
| Bore and Stroke | 3.00x4.25 | 3.75x4.25 | 3.25x5.50 | 3.50x5.00 | 4.00x6.00 | 3.75x4.25 |
| Horsepower (S. A. E.) | 14.40 | 22.50 | 16.90 | 19.60 | 26.00 | 22.50 |
| Piston Displacement | 120.2 | 187.7 | 183.0 | 192.4 | ...... | 187.7 |
| Cylinders, Shape, Cast | 4-I-Block | 4-L-Block | 4-L-Block | 4-I-Block | 4-Block | 4-L-Block |
| Who Makes Engine | Sterling | G. B. & S. | Hupp | I. S. Beaver | Moline | Laurel |
| Location of Valves | Head | Right | Left | Left | ...... | Overhead |
| Type of Camshaft Drive | Helical | Chain | Chain | Gear | ...... | ...... |
| Type of Cooling System | Ther.-Syp. | Ther.-Syp. | Ther.-Syp. | Ther.-Syp. | Ther.-Syp. | Ther.-Syp. |
| Lubrication System | F. F., Spl. | F. F., Spl. | Force feed | F. F., Spl. | Gear | F. F., Spl. |
| Type of Pump | Gear | ...... | Gear | Gear | Spl., pump | Gear |
| Ignition System Type | Single M. | Single | Single | Single | Bosch | Single |
| Make and Control | At. Kent | Conn., hand | At. Kent, hand | Remy, hand | ...... | Dixie, hand |
| Make of Carburetor | Zenith | Stromberg | Stromberg | Schebler | Schebler | Master |
| Method of Fuel Feed | Vacuum | Vacuum | Vacuum | Gravity | Vacuum | Vacuum |
| Starting System Make | Wagner | Dyneto | Bijur | Remy | Entz | Disco |
| Light. Sys., Make, Volt | Wagner, 6 | Dyneto | Bijur 6 | Remy | Entz, 24 | Disco, 6 |
| Type, Make of Clutch | Disc | Disc | Disc, Hupp | Cone | ...... | Disc |
| Type, Make of Gearset | S-U., M., D. G. | S-U., M., G. L. | S-Unit, M | S-Unit, M | ...... | S-Unit, M |
| Speed Ratios | Three | Three | Three | Three | ...... | Three |
| Drive Through | Springs | Springs | Springs | Torque tube | ...... | Springs |
| Type, Make Rear Axle | ¾ floating | Full float. | ¾ float., Hupp | Full floating | Amer. Ball B. | Full floating |
| Direct Drive Ratio | 4.00-1 | 4.25-1 | 4.91-1 | 4.00-1 | 3.50-1 | 4.25-1 |
| Wheelbase | 100 in. | 115, 106 in. | 112 in. | 110 in. | 135½ in. | 116 in. |
| Sizes of Tires | 28x3 | 32x4, 31x4 | 32x4 | 33x4 F. & R. | 35x5 | 32x4 |
| Wheels (Wood or Wire) | Wood | Wood | Wood | Wood | Wire | Wood |
| Type of Rear Springs | Cantilever | ½ ell. cant. | ½ elliptic | ¾ elliptic | Cantilever | Cantilever |
| Drive and Control | Right | Left, centre | Left, centre | Left, centre | ...... | Left, centre |
| Type Gearset Bearings | Ball | Ball | Ball, plain | Roller | ...... | Ball |
| Rear Axle Bearings | B. & R. | Roller | Roller | Roller | Bock | Roller |
| Front Axle Bearings | Ball | Ball | Ball | Ball | Bock | Roller |
| No. Eng. Main Bearings | Two | Three | Three | Three | Three | Three |

# FOUR-CYLINDER GASOLINE PASSENGER CAR MODELS FOR 1918.

General Price Lists, Data on Seating Capacities and Body Types Are Given in the Buyers' Index, Pages 42-46.

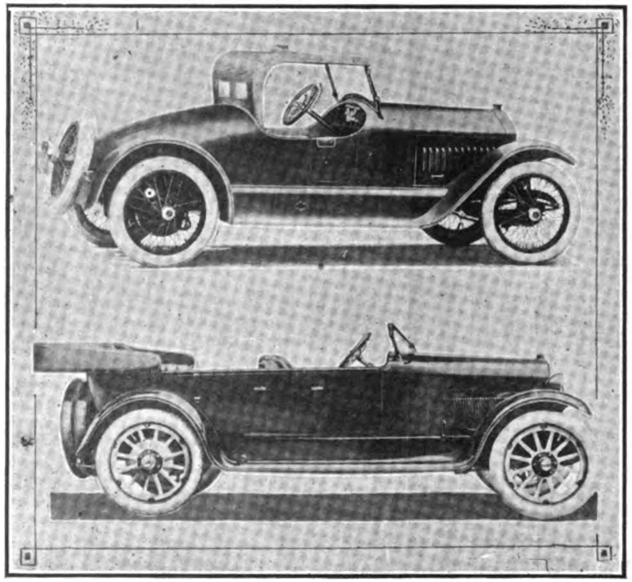
| Name of Car | Maibohm Four | Maxwell | Mercer | Metz | Moline-Knight | Moline-Knight |
|---|---|---|---|---|---|---|
| No. or Name of Model | A | 25 | 22-73 | 25 | G | 40-C |
| Price | ...... | $745 | $3500 | $695 | $1985 | $1650 |
| Bore and Stroke | 3.125x4.000 | 3.625x4.500 | 3.75x6.75 | 3.875x4.000 | 4.00x6.00 | 3.75x5.00 |
| Horsepower (S. A. E.) | 15.625 | 21.03 | 22.50 | 24.03 | 25.60 | 22.50 |
| Piston Displacement | 122.7 | 185.8 | 298.2 | 188.7 | 301.6 | 220.9 |
| Cylinders, Shape, Cast | 4-L-Block | 4-L-Block | 4-L-Block | 4-L-Block | 4-I-Block | 4-I-Block |
| Who Makes Engine | Maibohm | Maxwell | Mercer | Metz | Moline-Knight | Moline-Knight |
| Location of Valves | Left | Right | Right | Right | Sleeve | Sleeve |
| Type of Camshaft Drive | Helical | Helical | Chain | Spur | Chain | Chain |
| Type of Cooling System | Ther.-Syp. | Ther.-Syp. | Pump | Ther.-Syp. | Ther.-Syp. | Ther.-Syp. |
| Lubrication System | F. F., Spl. | F. F., Spl. | Force feed | Splash | Force F. | Force F. |
| Type of Pump | Gear | Plunger | Gear | Gear | Gear | Gear |
| Ignition System Type | Single | Single | Single | Single | Single | Single |
| Make and Control | At. Kent, hand | At. Kent, hand | Bosch, hand | At. Kent | Conn., hand | Conn., hand |
| Make of Carburetor | Zenith | K. D. | Zenith | A. W. T. | Schebler | Schebler |
| Method of Fuel Feed | Gravity | Gravity | Vacuum | Gravity | Vacuum | Vacuum |
| Starting System Make | Disco | Simms-Huff | U. S. L. | Westinghouse | Auto-Lite | Auto-Lite |
| Light. Sys., Make, Volt | Disco | At. Kent, 12 | U. S. L. | Westinghouse | Wagner | Wagner |
| Type, Make of Clutch | Disc | Cone | Disc | Friction disc | Cone | Cone |
| Type, Make of Gearset | S-Unit, M | S-Unit, M | Selec. amid. | Metz, amid. | Selec.-Amid. | Selec.-Amid. |
| Speed Ratios | Three | Three | Four | Seven | Three | Three |
| Drive Through | Springs | Springs | Springs | ...... | Torque arm | Torque arm |
| Type, Make Rear Axle | ¾ floating | ¾ floating | Full floating | Rad. rods | ½ floating | ½ floating |
| Direct Drive Ratio | 4.25-1 | 3.58-1 | 3.22-1, 3.87-1 | Dead | 4.00-1 | 4.90-1 |
| Wheelbase | 105 in. | 109 in. | 115, 132 in. | 108 in. | 122 in. | 118 in. |
| Sizes of Tires | 30x3½, F. & R. | 30x3½, 31x4 | 32x4, 34x4½ | 32x3½, F. & R. | 35x4½, F. & R. | 34x4, F. & R. |
| Wheels (Wood or Wire) | Wood | Wood, wire | Wood | Wood | Wood | Wood |
| Type of Rear Springs | ½ elliptic | ½ elliptic | ½ elliptic | Elliptic | Special | Special |
| Drive and Control | Left, centre | Left, centre | Left, centre | Left, centre | Left, centre | Left, centre |
| Type Gearset Bearings | Ball | Roller | Ball | None | Roller | Roller |
| Rear Axle Bearings | Roller | Roller | B. & R. | Roller | Roller | Roller |
| Front Axle Bearings | Ball | Ball | Roller | Ball | Roller | Roller |
| No. Eng. Main Bearings | Two | Two | Three | Three | Three | Three |



Above, Kissel Sedan, Summer Top; Below, Mitchell.

| Name of Car | Moline-Knight | Monitor | Monroe | Monroe | Moore | Napoleon | Nelson | Olympian | Overland | Overland |
|---|---|---|---|---|---|---|---|---|---|---|
| No. or Name of Model | L Sedan | C. & R. | M-3 | M-6 | E 30 | 18-36 | 1917-1918 | 45 | 85-4 | 90 |
| Price | $2280 | $995 | $635, $965 | $1095 | $695 | $1085 | $1200, $1400 | $1085 | $930 | $795 |
| Bore and Stroke | 3.75x5.00 | 3.75x4.25 | 3.00x4.25 | 3.25x4.50 | 3.75x4.25 | 2.50x5.00 | 3.125x4.750 | 3.25x4.50 | 4.125x4.500 | 3.375x5.000 |
| Horsepower (S. A. E.) | 22.50 | 22.50 | 14.50 | 16.90 | 22.50 | 16.90 | 16.90 | 16.90 | 27.20 | 18.25 |
| Piston Displacement | 220.9 | 187.7 | 120.0 | 150.0 | 187.9 | 165.9 | 145.7 | 149.2 | 240.0 | 179.0 |
| Cylinders, Shape, Cast | 4-I-Block | 4-L-Block | 4-L-Block | 4-L-Block | 4-L-Block | 4-L-Block | 4-I-Block | 4-I-Block | 4-L-Block | 4-L-Block |
| Who Makes Engine | Moline-Knight | G. B. & S. | Sterling | Monroe | G. B. & S. | Lycoming | Nelson | Olympian | Overland | Overland |
| Location of Valves | Sleeve | Left | Head | Head | Left | Side | Head | Head | Right | Right |
| Type of Camshaft Drive | Chain | Chain | Helical | Helical | Chain | Helical. gear | Overhead | ...... | Helical | Helical |
| Type of Cooling System | Ther.-Syp. | Ther.-Syp. | Ther.-Syp. | Ther.-Syp. | Ther.-Syp. | Ther.-Syp. | Ther.-Syp. | Ther.-Syp. | Ther.-Syp. | Ther.-Syp. |
| Lubrication System | Force F. | F. F. & Spl. | Splash | Force F. | F. F. & Spl. | F. F., Spl. | Force F. | Force feed | Splash | Splash |
| Type of Pump | Gear | ...... | Plunger | Gear | Plunger | Plunger | Gear | Gear | Gear | Plunger |
| Ignition System Type | Single | Single | Single | Single | Single | Single | Single | Single | Single | Single |
| Make and Control | Conn., hand | Heinze | Conn., hand | Conn., hand | Dixie, hand | Delco, H. & A. | Bosch spec. | Conn., hand | Conn., hand | Conn., hand |
| Make of Carburetor | Schebler | Schebler | Zenith | Zenith | Schebler | ...... | Zenith | Stromberg | Tillotson | Tillotson |
| Method of Fuel Feed | Vacuum | Vacuum | Gravity | Vacuum | Vacuum | Vacuum | Vacuum | Vacuum | Vacuum | Vacuum |
| Starting System Make | Auto-Lite | Heinze | Auto-Lite | Auto-Lite | Dyneto | Dyneto | U. S. L. spec. | Wagner | Auto-Lite | Auto-Lite |
| Light. Sys., Make, Volt | Wagner, 6 | Heinze | Auto-Lite, 6 | Auto-Lite | Dyneto | Dyneto, 6 | U. S. L. spec. | Wagner | Auto-Lite | Auto-Lite |
| Type, Make of Clutch | Disc, B. & B. | Disc | Disc | Disc | Disc | D. P., B. & B. | Disc | Disc, B. & B. | Cone | Cone |
| Type, Make of Gearset | Sel., Warner | S-Unit, M | S-Unit, M | S-Unit, M | S-U., M., G. L. | Selec, Mech. | S-Unit, X | S-Unit, M | S-Unit, X | S-Unit, X |
| Speed Ratios | Three | Three | Three | Three | Three | Three | Three | Three | Three | Three |
| Drive Through | Torque arm | Springs | Springs | Torque rods | Springs | ...... | Springs | Springs | Torque rod | Torque rod |
| Type, Make Rear Axle | ½ F., Timken | ½ floating | ¾ F., W. W. | Special | F. F., Peru | Full floating | Full floating | ¾ floating | ¾ floating | ¾ floating |
| Direct Drive Ratio | 4.90-1 | 4.00-1 | 4.25-1 | 4.75-1 | 4.50-1 | 4.21-1 | 4.25-1 | 4.75-1 | 4.00-1 | 4.00-1 |
| Wheelbase | 118 in. | 110 in. | 96 in. | 115 in. | 106 in. | 112 in. | 104 in. | 112 in. | 112 in. | 106 in. |
| Sizes of Tires | 34x4, F. & R. | 32x3½, F. & R. | 31x3½ | 32x4 | 30x3½ | 32x4 | 32x4, F. & R. | 32x3½ | 32x4, F. & R. | 31x4, F. & R. |
| Wheels (Wood or Wire) | Wood | Wood | Wood | Wood | Wood | Wood | Wood | Optional | Wood | Wire |
| Type of Rear Springs | Special | ¾ elliptic | ¾ elliptic | Cantilever | Cantilever | Cantilever | Special | ½ elliptic | Cantilever | Cantilever |
| Drive and Control | Left, centre | Left, centre | Left, centre | Left, centre | Left, centre | Left, centre | Left, centre | Left, centre | Left, centre | Left, centre |
| Type Gearset Bearings | Roller | Ball | Ball | Ball | Ball | B. & P. | Ball | Ball | B. & R. | B. & R. |
| Rear Axle Bearings | Roller | Roller | B. & R. | B. & R. | Roller | B. & R. | Ball | B. & R. | B. & R. | B. & R. |
| Front Axle Bearings | Roller | Ball | B. & R. | Roller | Ball | Roller | Ball | Ball | Roller | Roller |
| No. Eng. Main Bearings | Three | Three | Two | Two | Three | Two | Two | Two | Five | Two |

| Name of Car | Pan | Pilgrim | Princess | Regal | Reo | Saxon | Seneca | Stearns-Knight | Studebaker | Stutz, 16 V. |
|---|---|---|---|---|---|---|---|---|---|---|
| No. or Name of Model | 250 | Model 37 | 4-36 | Hi Power Four | R | B5R | D 4-27 | S K L 4 | Four | S-400, Bearcat |
| Price | $950 | $895 | $825 | $795 | $985 | $445 | $850 | $1785 | ...... | $2550, $2750 |
| Bore and Stroke | 3.50x5.00 | 3.75x4.25 | 3.75x4.25 | 3.50x4.75 | 4.125x4.500 | 2.75x4.00 | 3.125x4.500 | 3.750x5.625 | 3.50x5.00 | 4.375x6.000 |
| Horsepower (S. A. E.) | 19.60 | 22.50 | 22.50 | 19.60 | 27.20 | 12.10 | 15.63 | 22.50 | 19.60 | 30.60 |
| Piston Displacement | 194.2 | 187.9 | 187.7 | 183.0 | 240.5 | 95.0 | 141 | 248.5 | 212.4 | 360.8 |
| Cylinders, Shape, Cast | 4-L-Block | 4-L-Block | 4-L-Block | 4-L-Block | 4-L-Block | 4-L-Block | 4-L-Block | 4-L-Block | 4-L-Block | 4-T-Block |
| Who Makes Engine | Continental | G. B. & S. | G. B. & S. | Regal | Reo | Continental | Le Roi | Stearns | Studebaker | Own |
| Location of Valves | Right | Left | Left | Left | Side | Right | Right | Sleeve | Left | R. & L. |
| Type of Camshaft Drive | Helical | Chain | Helical | Helical | Helical gear | Helical | Gear | Chain | Helical | Helical |
| Type of Cooling System | Ther.-Syp. | Ther.-Syp. | Ther.-Syp. | Ther.-Syp. | Pump | Ther.-Syp. | Ther.-Syp. | Pump | Pump | Pump |
| Lubrication System | F. F., Spl. | F. F., Spl. | F. F. & Spl. | Splash | F. F., Spl. | Splash | Splash | F. F. Spl. | F. F. & Spl. | Force F. |
| Type of Pump | Plunger | Plunger | ...... | Plunger | Plunger | Plunger | Plunger | Gear | Gear | Gear |
| Ignition System Type | Single | Single | Single | Single | Single | Single | Remy | Single | Single | Double |
| Make and Control | Remy | Eisemann | Splitdorf, hand | A. Kent, hand | Remy, hand | At. Kent, auto. | Remy, hand | Remy, hand | Remy, hand | ...... |
| Make of Carburetor | Zenith | Zenith | Schebler | Carter | Johnson | Reichenbach | Schebler | Schebler | Schebler | Stromberg |
| Method of Fuel Feed | Gravity | Vacuum | Vacuum | Vacuum | Gravity | Gravity | Vacuum | Vacuum | Vacuum | Pressure |
| Starting System Make | Remy | Westinghouse | Disco | Auto-Lite | Remy | Wagner | Allis Chal. | Westinghouse | Stud., Wagner | Remy |
| Light. Sys., Make, Volt | Remy, 6 | West., 6 | Disco, 6 | Auto-Lite, 6 | Remy, 6 | Wagner | Allis Chal., 6 | West., 12 | Stud., Wag., 6 | Remy, 6 |
| Type, Make of Clutch | Disc, B. & B. | Disc, G. B. S. | Disc | Cone | Disc, Reo | Disc | Disc | Disc, Stearns | Cone, Stud. | Cone, own |
| Type, Make of Gearset | Sel., Detroit | Sel., Detroit | S-Unit, M | S-Unit, M | Selec., Reo | S-Unit, X | S-Unit, M | S-U., M., S. | Sel., amid. | S-Unit, X |
| Speed Ratios | Three | Three | Three | Three | Three | Three | Three | Three | Three | Three |
| Drive Through | Springs | Springs | Springs | Torque rod | Torque arm | Torque rod | Springs | Springs | Springs | Torque tube |
| Type, Make Rear Axle | ¾ F., Adams | ¾ F., Hess | Full floating | Full floating | Reo | ½ floating | Floating | ½ F., Stearns | ½ float., Stud. | Floating, own |
| Direct Drive Ratio | 4.50-1 | 4.07-1 | 4.25-1 | 4.25-1 | 4.30-1 | 5.00-1 | 4.50-1 | 4.50-1 | 4.00-1 | 3.50-1 |
| Wheelbase | 115 in. | 114 in. | 108 in. | 108 in. | 115 in. | 96 in. | 108 in. | 119 in. | 112 in. | 130 in. |
| Sizes of Tires | 34x4 | 32x3½ | 32x3½, F. & R. | 30x3½, F. & R. | 34x4 | 30x3, F. & R. | 30x3½ | 34x4 | 32x3½ | 32x4½ |
| Wheels (Wood or Wire) | Wood | Wood | Wood | Wood | Wood | Wood | Wood | Wood | Wood | Wire |
| Type of Rear Springs | ½ elliptic | ½ elliptic | ¾ elliptic | Cantilever | ¾ elliptic | Cantilever | Cantilever | Cantilever | ½ elliptic | ½ elliptic |
| Drive and Control | Bevel gear | Left, centre | Left, centre | Left, centre | Left, centre | Left, centre | Left, centre | Left, centre | Left, centre | Right, right |
| Type Gearset Bearings | Ball | Ball | B. & R. | Ball | Roller | Plain | Ball | B. & R. | Roller | Ball |
| Rear Axle Bearings | Ball | Roller | B. & R. | Roller | Roller | Roller | Ball | B. & R. | Roller | B. & R. |
| Front Axle Bearings | Ball | Ball | Ball | Ball | Roller | Ball | Ball | Ball | Roller | Roller |
| No. Eng. Main Bearings | Three | Three | Three | Three | Three | Two | Two | Three | Three | Three |



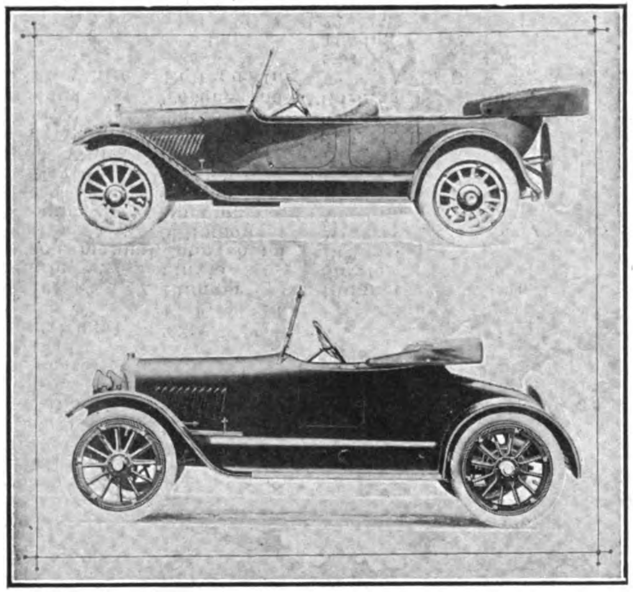
Above, National 12-Cylinder Speedster; Below, Case Six.

| Name of Car | Templar | Trumbull | White | Willys-Knight | Wolverine | Wolverine |
|---|---|---|---|---|---|---|
| No. or Name of Model | 445 | 16 B | 16 Valve 4 | 88-4 | Speed. Special | 4-P. Sport Car |
| Price | $1985 | $495 | Chassis $3900 | $1525 | $3500 | $3750 |
| Bore and Stroke | 3.375x5.500 | 2.875x4.000 | 4.25x5.75 | 4.125x4.500 | 3.984x6.000 | 3.984x6.000 |
| Horsepower (S. A. E.) | 18.20 | 13.23 | 28.90 | 27.19 | 25.00 | 25.00 |
| Piston Displacement | 197.0 | 103.7 | 326.3 | 240.5 | 299.0 | 299.0 |
| Cylinders, Shape, Cast | 4-I-Block | 4-L-Block | 4-T-Block | 4-I-Block | 4-L-Block | 4-L-Block |
| Who Makes Engine | Templar | Milwaukee | White | Willys-Knight | Own | Own |
| Location of Valves | Head | Right | Opposite | Sleeves | Right | Right |
| Type of Camshaft Drive | Chain | Helical | Helical | Chain | Helical | Helical |
| Type of Cooling System | Pump | Ther.-Syp. | Centrifugal | Ther.-Syp. | Pump | Pump |
| Lubrication System | Force F. | Splash | Force F. | F. F. & Spl. | F. F., Spl. | F. F., Spl. |
| Type of Pump | Gear | Plunger | Gear | Plunger | Plunger | Plunger |
| Ignition System Type | Single | Single | Single | Single | Single | Single |
| Make and Control | Remy, hand | Splitdorf, hand | Bosch, manual | Conn., hand | Berling | Berling |
| Make of Carburetor | Zenith | Zephyr | White | Tillotson | Miller | Miller |
| Method of Fuel Feed | Vacuum | Gravity | Vacuum | Vacuum | Vacuum | Vacuum |
| Starting System Make | Remy | Ward-Leonard | Leece Neville | Auto-Lite | Bijur | Bijur |
| Light. Sys., Make, Volt | Remy | Ward-Leonard | L. Neville, 12 | Auto-Lite | Bijur, 6 | Bijur, 6 |
| Type, Make of Clutch | Disc | Cone | Disc, White | Cone | Disc, B. & L. | Disc, B. & L. |
| Type, Make of Gearset | S-Unit, M | S-Unit, X | S-U., M., White | S-Unit, X | S-U. M., B. & L. | S-U., M., B & L. |
| Speed Ratios | ........ | Three | Four | Three | Three | Three |
| Drive Through | Springs | Torque rod | Springs | Torque rod | Springs | Springs |
| Type, Make Rear Axle | ½ floating | ½ floating | ½ F., White | Full floating | F. F., A. B. B. | F. F., A. B. B. |
| Direct Drive Ratio | 4.43-1 | 3.60-1 | ...... | 4.30-1 | 2.94-1 | 4.10-1 |
| Wheelbase | 118 in. | 80 in. | 137½, 124½ in. | 121 in. | 117 in. | 127 in. |
| Sizes of Tires | 32x4, F. & R. | 28x3, F. & R. | 35x5 | 34x4½, F. & R. | 32x4½ | 32x4½ |
| Wheels (Wood or Wire) | Wood | Wire | Wood | Wood | Wire | Wire |
| Type of Rear Springs | ½ elliptic | ¾ elliptic | ½ elliptic | Cantilever | ½ elliptic | ½ elliptic |
| Drive and Control | Left, centre | Left, centre | Left, centre | Left, centre | Left, centre | Left, centre |
| Type Gearset Bearings | Ball | Ball | Ball | B. & R. | Ball | Ball |
| Rear Axle Bearings | Roller | B. & R. | Ball | Roller | Bock | Bock |
| Front Axle Bearings | Roller | Ball | Ball | B. & R. | Bock | Bock |
| No. Eng. Main Bearings | Three | Two | Three | Three | Three | Three |

# SPECIFICATIONS OF 1918'S SIX-CYLINDER PASSENGER CARS.

**General Price Lists, Data on Seating Capacities and Body Types Are Given in the Buyers' Index, Pages 42-46.**

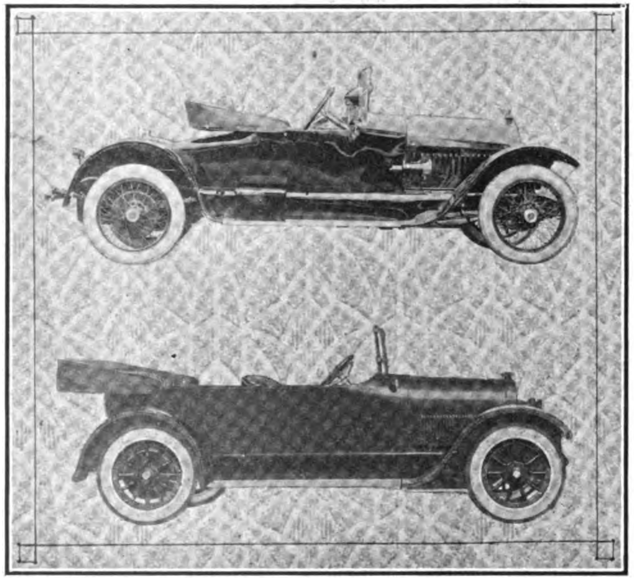
| Name of Car | Woods Dual P | Abbott | American Six | Anderson | Auburn | Auburn |
|---|---|---|---|---|---|---|
| No. or Name of Model | 54 | 6-44 | B | Six-40 | 6-44 | 6-39-B |
| Price | $2950 | $1295 | $1375 | $1435 | $1685 | $1345 |
| Bore and Stroke | 2.75x4.00 | 3.25x4.50 | 3.125x5.000 | 3.25x4.50 | 3.50x5.25 | 3.25x4.50 |
| Horsepower (S. A. E.) | 12.12 | 25.35 | 23.40 | 25.35 | 29.40 | 25.40 |
| Piston Displacement | 95.0 | 224.0 | 230.0 | 224.0 | 303.1 | 224.0 |
| Cylinders, Shape, Cast | 4-L-Block | 6-L-Block | 6-L-Block | 6-L-Block | 6-L-Block | 6-L-Block |
| Who Makes Engine | Continental | Continental | Rutenber | Continental | Continental | Continental |
| Location of Valves | Left | Right | Right | Right | Right | Right |
| Type of Camshaft Drive | Helical | Helical | Helical | Gear | Helical | Helical |
| Type of Cooling System | Ther.-Syp. | Pump | Pump | Pump | Pump | Pump |
| Lubrication System | F. F., Spl. | F. F. & Spl. | F. F., Spl. | Force F. | Splash | F. F., Spl. |
| Type of Pump | Plunger | Plunger | Plunger | Plunger | Plunger | Plunger |
| Ignition System Type | Single | Single | Single | Single | Single | Single |
| Make and Control | At. Kent, auto | Remy, hand | G. & D., hand | Conn., hand | Delco, H. & A. | Remy, H. & A. |
| Make of Carburetor | Stromberg | Stromberg | Zenith | Zenith | Rayfield | Rayfield |
| Method of Fuel Feed | Gravity | Vacuum | Vacuum | Gravity | Vacuum | Vacuum |
| Starting System Make | Double | Remy | Gray & Davis | West. | Delco | Remy |
| Light. Sys., Make, Volt | 48 | Remy | G. & D., 6 | West. | Delco, 6 | Remy, 6 |
| Type, Make of Clutch | Mag., Cut.-H. | Disc | Disc, B. & B. | Disc | Disc | Disc |
| Type, Make of Gearset | None | S-Unit, M | S-U., M., Mech. | S-Unit, M | S-Unit, M | S-Unit, M |
| Speed Ratios | Direct | Three | Three | Three | Three | Three |
| Drive Through | Springs | Springs | Springs | Springs | Springs | Springs |
| Type, Make Rear Axle | ½ F., Woods | ¾ floating | ¾ F., Salis. | ½ floating | Full floating | ¾ floating |
| Direct Drive Ratio | 8.25-1 | 4.42-1, 4.75-1 | 4.43-1 | 4.42-1 | 4.00-1 | 4.42-1 |
| Wheelbase | 124½ in. | 122 in. | 122 in. | 120 in. | 131 in. | 120 in. |
| Sizes of Tires | 35x4½ | 32x4, 33x4½ | 32x4 | 33x4, F. & R. | 35x4½, F. & R. | 34x4, F. & R. |
| Wheels (Wood or Wire) | Wood or wire | Wood | Wood | Wood | Wood | Wood |
| Type of Rear Springs | Cantilever | ½ elliptic | ½ elliptic | ½ elliptic | Cantilever | ½ elliptic |
| Drive and Control | ...... | Left, centre | Left, centre | Left, centre | Left, centre | Left, centre |
| Type Gearset Bearings | ...... | Ball | B. & P. | Roller | Ball | Plain |
| Rear Axle Bearings | Ball | B. & R. | B. & R. | Ball | Roller | Roller |
| Front Axle Bearings | Roller | Roller | Ball | Ball | Ball | Ball |
| No. Eng. Main Bearings | Three | Three | Three | Three | Three | Three |



Above, Oldsmobile Speedster; Below, Grant Roadster.

| Name of Car | Austin | Austin | Birch | Bour-Davis | Buick | Case | Chalmers | Chandler | Columbia Six | Columbia |
|---|---|---|---|---|---|---|---|---|---|---|
| No. or Name of Model | 36-66 | 48-66 | Light Six | 18 B | E-45 | U | Six 30 | 18 | Six A | Six B |
| Price | $3400 | $4200 | $1055 | $1650 | $1361 | $1875 | $1365 | $1595 | $1350 | $1495 |
| Bore and Stroke | 3.375x5.250 | 4.50x6.00 | 3.00x4.25 | 3.25x4.50 | 3.375x4.500 | 3.50x5.25 | 3.25x4.50 | 3.50x5.00 | 3.25x4.50 | 3.25x4.50 |
| Horsepower (S. A. E.) | 36.00 | 48.00 | 21.60 | 25.30 | 27.34 | 29.40 | 25.40 | 29.40 | 25.30 | 25.30 |
| Piston Displacement | 371.0 | 572.0 | 180.0 | 224.0 | 241.0 | 303.1 | 224.0 | 288.4 | 224.0 | 224.0 |
| Cylinders, Shape, Cast | 6-T-Block | 6-T-Block | 6-I-Block | 6-L-Block | 6-I-Block | 6-L-Block | 6-L-Block | 6-L-Block | 6-L-Block | 6-L-Block |
| Who Makes Engine | Teetor | Teetor | Falls | Continental | Buick | Continental | Chalmers | Chandler | Continental | Continental |
| Location of Valves | Head | Head | Head | Right | Head | Right | Left | Side | Right | Right |
| Type of Camshaft Drive | Gear | Gear | Helical | Gear | Helical | Helical gear | Helical | Chain | Gear | Gear |
| Type of Cooling System | Pump | Pump | Ther.-Syp. | Pump | Pump | Pump | Ther.-Syp. | Pump | Pump | Pump |
| Lubrication System | Force F. | Force F. | Spl., Pump | F. F. & Spl. | F. F., Spl. | Splash | F. F. & Spl. | F. F., Spl. | F. F., Spl. | F. F., Spl. |
| Type of Pump | ...... | ...... | ...... | Gear | Gear | Plunger | Gear | Plunger | Centrifugal | Centrifugal |
| Ignition System Type | Two point | Two point | Battery | Single | Single | Bat., V. unit | Single | Single | Single | Single |
| Make and Control | Bosch, hand | Bosch, hand | Remy | Remy, hand | Delco | West., hand | Remy, H. & A. | Bosch | At. Kt., hand | At. Kent. |
| Make of Carburetor | Master | Master | Stewart | Stromberg | Marvel | Rayfield | Stromberg | Rayfield | Stromberg | Stromberg |
| Method of Fuel Feed | Vacuum | Vacuum | Vacuum | Vacuum | Vacuum | Vacuum | Vacuum | Vacuum | Vacuum | Vacuum |
| Starting System Make | Bosch | Bosch | Splitdorf | Gray & Davis | Delco | Westinghouse | West. | Gray & Davis | Ward-Leon. | Ward-Leon. |
| Light. Sys., Make, Volt | Bosch | Bosch | Splitdorf 6 | Gray & Davis | Delco | West., 6 | West. | Gray & Davis | Rolben, 6 | Rolben, 6 |
| Type, Make of Clutch | Disc | Disc | Cone | Disc | D. P. | Disc., B. & B. | Disc | Disc, B. & B. | Disc, B. & B. | Disc., B. & B. |
| Type, Make of Gearset | S-Unit, M | S-Unit, M | S-U., M., Lewis | S-Unit, M | Sel., Buick | Sel., G. L. | S-Unit, M | Selec., B. & B. | S-Unit, M | S-Unit, M |
| Speed Ratios | 6, 2 reverse | 6, 2 reverse | Three | Three | Three | Three | Three | Three | Three | Three |
| Drive Through | Springs | Springs | Torque tube | Springs | Torque tube | Springs | Springs | Springs | Springs | Springs |
| Type, Make Rear Axle | Full floating | Full floating | Full floating | ¾ floating | Float., W. M. | ¾ F., Columbia | ½ floating | F. F., Chandler | ¾ floating | ¾ floating |
| Direct Drive Ratio | 5.25-1 | 5.25-1 | 4.25-1 | 4.42-1 | 4.08-1 | 4.46-1 | 4.75-1, 5.18-1 | 4.25-1 | 4.75-1 | 3.90-1 |
| Wheelbase | 142 in. | 142 in. | 116 in. | 118 in. | 118 in. | 125 in. | 115, 122 in. | 123 in. | 115 in. | 115 in. |
| Sizes of Tires | 34x4½, F. & R. | 34x4½, F. & R. | 32x3½ | 32x4 F. & R. | 34x4 | 35x4½ | 32x4, 34x4 | 34x4 | 32x4 | 32x4 |
| Wheels (Wood or Wire) | Wood | Wood | Optional | Wood | Wood | Wood | Wood | Wood | Wood | Wire |
| Type of Rear Springs | Double canti. | Double canti. | Cantilever | ½ elliptic | Cantilever | ½ elliptic | ½ elliptic | ½ elliptic | Cantilever | Cantilever |
| Drive and Control | Left, centre | Left, centre | Left, centre | Left, centre | Left, centre | Left, centre | Left, centre | Left, centre | Left, centre | Left, centre |
| Type Gearset Bearings | Ball | Ball | Ball | Ball | Ball | Ball | Roller | Ball | Ball | Ball |
| Rear Axle Bearings | Ball | Ball | ...... | Roller | B. & R. | Roller | Roller | Ball | Cup and cone | Cup and cone |
| Front Axle Bearings | Roller | Roller | Ball | Ball | Ball | Roller | Roller | Roller | Cup and cone | Cup and cone |
| No. Eng. Main Bearings | Four | Four | Three | Three | Four | Three | Three | Three | Three | Three |

| Name of Car | Comet | Crawford | Davis | Davis | Dorris | Elcar | Elgin Six | Empire 6 | Fageol | Franklin |
|---|---|---|---|---|---|---|---|---|---|---|
| No. or Name of Model | Centennial Six | 6-40 | Six H-I | Six J | 1 C 6 | D-6, E-6, G-6 | Series F | 70 A, 70 S, 73 | 100 | Series 9 |
| Price | $1285 | $2250 | $1485 | $1785 | ...... | $1295, $1795 | $1095 | $1345, $1685 | $10,000 | $2000, $3200 |
| Bore and Stroke | 3.50x5.00 | 3.50x5.25 | 3.25x4.50 | 3.50x5.25 | 4.00x5.00 | 3.25x4.50 | 3.00x4.25 | 3.25x4.50 | 5.00x7.00 | 3.125x4.000 |
| Horsepower (S. A. E.) | 29.40 | 29.40 | 25.35 | 29.40 | 38.40 | 25.35 | 21.60 | 25.30 | 60.00 | 25.30 |
| Piston Displacement | 288.6 | 303.1 | 224.0 | 303.0 | 377.0 | 223.9 | 180.0 | 224.0 | 824.6 | 119.0 |
| Cylinders, Shape, Cast | 6-L-Block | 6-L-Block | 6-L-Block | 6-L-Block | 6-I-3's | 6-L-Block | 6-I-Block | 6-L-Block | 6-I-Sep. | 6-I-Sep. |
| Who Makes Engine | Lewis | Continental | Continental | Continental | Dorris | Continental | Falls | Continental | Hall-Scott | Franklin |
| Location of Valves | Side | Right | Right | Right | Head | Right | Left | L head | Head | Head |
| Type of Camshaft Drive | Helical | Gear | Gear | Gear | Hel. gear | Helical | Helical | Helical | Special | Helical |
| Type of Cooling System | Pump | Pump | Pump | Pump | Centrifugal | Pump | Ther.-Syp. | Pump | Special | Air |
| Lubrication System | F. F., Spl. | F. F. & Spl. | F. F. & Spl. | F. F., Spl. | Force feed | F. F., Spl. | Cir. splash | F. F., Spl. | Force F. | Force feed |
| Type of Pump | Centrifugal | ...... | Plunger | Plunger | Twin gear | Plunger | Plunger | Plunger | Gear | Gear |
| Ignition System Type | Delco | Single | Single | Single | Bosch magneto | Single | Single | Single | Dual | Single |
| Make and Control | Delco, H. & A. | Bosch | Delco, hand | Delco, H. & A. | Bosch, hand | At. Kent, hand | Remy | Conn., hand | Special | At. Kent, auto. |
| Make of Carburetor | Miller | Stromberg | Stromberg | Stromberg | Stromberg | Stromberg | Stromberg | Stromberg | Zenith spec. | Franklin |
| Method of Fuel Feed | Vacuum | Vacuum | Vacuum | Vacuum | Vacuum | Vacuum | Vacuum | Vacuum | Vacuum | Vacuum |
| Starting System Make | Dyneto | West. | Delco | Delco | Westinghouse | Dyneto | Wagner | Auto-Lite | Bosch | Dyneto |
| Light. Sys., Make, Volt | Dyneto, 6 | West. | Delco | Delco | West., 6 | Dyneto, 6 | Wagner | Auto-Lite, 6 | Bosch | Dyneto, 12 |
| Type, Make of Clutch | Disc | Disc | Cone | Cone | Disc | Disc, B. & B. | Disc | Disc, B. & B. | Disc | Disc, own |
| Type, Make of Gearset | Selective | S-Unit, M | S-Unit, M | S-Unit, M | S-Unit, M | Sel., Muncie | S-Unit, M | S-U., M., Mech. | S-Amid. | S-Unit, M |
| Speed Ratios | Four one-half | Three | Three | Three | Three | Three | Three | Three | Three | Four |
| Drive Through | Torque arm | ...... | Springs | Springs | Springs | Springs | Springs | Springs | Springs | Springs |
| Type, Make Rear Axle | ¾ floating | ¾ floating | ¾ floating | Full floating | Timken, F. F. | F. F., Salis. | Float., Adams | F. F., Hess | ½ floating | ½ float., own |
| Direct Drive Ratio | 4.50-1 | 4.58-1 | 4.42-1 | 4.43-1 | 4.08-1 | 4.50-1 | 4.50-1 | 4.60-1 | 5.00-1 | 4.33-1 |
| Wheelbase | 125 in. | 122½ in. | 119 in. | 124 in. | 130 in. | 116 in. | 117 in. | 120 in. | 135, 145 in. | 115 in. |
| Sizes of Tires | 33x4 | 32x4, F. & R. | 34x4, F. & R. | 34x4½, F. & R. | 36x4½ | 33x4 | 33x4 | 34x4 | 34x4½, F. & R. | 32x4, 33x4½ |
| Wheels (Wood or Wire) | Wood | Wood | Wood | Wood | Wood, wire | Wood | Wood | Wood | Wire | Wood |
| Type of Rear Springs | Cantilever | ¾ elliptic | ½ elliptic | ½ elliptic | ¾ platform | ½ elliptic | Cantilever | ½ elliptic | ½ elliptic | Full elliptic |
| Drive and Control | Left, centre | Left, centre | Left, centre | Left, centre | Left, centre | Left, centre | Left, centre | Left, centre | Left, centre | Left, centre |
| Type Gearset Bearings | Ball | Roller | Ball | Ball | Ball | Ball | Ball | Ball, plain | Ball | Ball |
| Rear Axle Bearings | Roller | Roller | Roller | Roller | Roller | Roller | Ball | B. & R. | Roller | Ball |
| Front Axle Bearings | Cup and cone | Roller | Ball | Roller | Roller | Roller | Roller | Cup and cone | ...... | Ball |
| No. Eng. Main Bearings | Three | Three | Three | Three | Seven | Three | Three | Three | Seven | Seven |



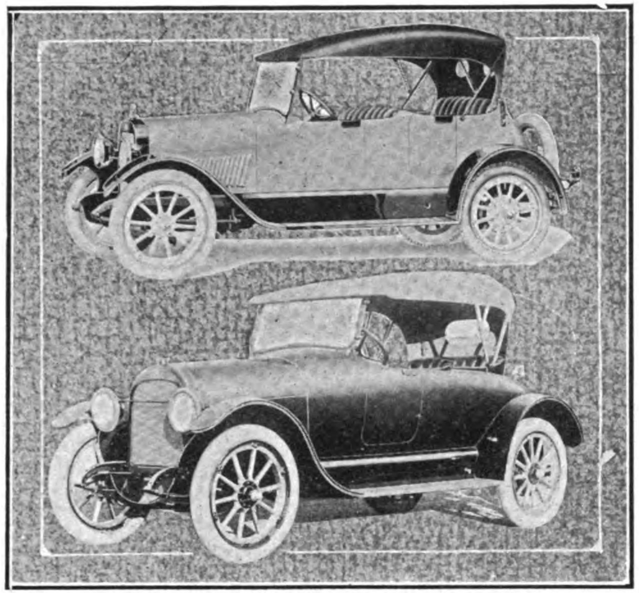
Above, Stutz Roadster; Below, Cadillac Touring Car.

| Name of Car | Geronimo | Ghent | Glide | Grant Six | Haynes L. Six | Hollier |
|---|---|---|---|---|---|---|
| No. or Name of Model | 6A 45 | 6-60 | 6-40 | G | 38 and 39 | 206 |
| Price | $1395 | $2160, $2750 | $1495 | $1055 | $1725, $1825 | ...... |
| Bore and Stroke | 3.50x5.00 | 3.50x5.25 | 3.125x5.000 | 3.00x4.25 | 3.50x5.00 | 3.25x4.50 |
| Horsepower (S. A. E.) | 23.44 | 29.40 | 23.40 | 21.60 | 29.40 | 25.30 |
| Piston Displacement | 230.0 | 303.1 | 230.0 | 180.0 | 288.6 | 224.0 |
| Cylinders, Shape, Cast | 6-L-Block | 6-L-Block | 6-L-Block | 6-I-Block | 6-L-Block | 6-L-Block |
| Who Makes Engine | Rutenber | Continental | Rutenber | Grant, Falls | Haynes | Continental |
| Location of Valves | Right | Head | Right | Overhead | Right | Head |
| Type of Camshaft Drive | Spiral gear | Helical | Helical | Helical | Helical | Helical |
| Type of Cooling System | Pump | Pump | Pump | Ther.-Syp. | Pump | Ther.-Syp. |
| Lubrication System | F F., Spl. | F. F., Spl. | F. F., Spl. | F. F., Spl. | Splash | F. F., Spl. |
| Type of Pump | Plunger | Centrifugal | Plunger | Plunger | Plunger | Gear |
| Ignition System Type | Battery | Single | Single | Single | Single | Single |
| Make and Control | Delco, Lewis | Conn., hand | West., hand | Remy, auto. | Remy, hand | Remy, auto. |
| Make of Carburetor | Stromberg | Stromberg | Rayfield | Stromberg | Ray. & Till. | Stewart |
| Method of Fuel Feed | Vacuum | Vacuum | Vacuum | Vacuum | Vacuum | Vacuum |
| Starting System Make | Dyneto | Westinghouse | Westinghouse | Wagner | Leece-Neville | Splitdorf |
| Light. Sys., Make, Volt | Dyneto, 6 | West., 6 | West., 6 | Wagner, 6 | Leece-Neville | Splitdorf, 6 |
| Type, Make of Clutch | Disc, B. & B. | Disc, B. & B. | Disc | Cone, Durston | Disc | Cone, own |
| Type, Make of Gearset | S-Unit, M | S-U., M., G. L. | S-Unit, M | S-U., M., Dur. | S-Unit, M | S.-Unit, M |
| Speed Ratios | Three | Three | Three | Three | Three | Three |
| Drive Through | Springs | Springs | Springs | Torque tube | Springs | Springs |
| Type, Make Rear Axle | Walker | ¾ F., Salis. | ¾ floating | F. F., Peru | ¾ floating | Own |
| Direct Drive Ratio | 4.50-1 | 4.57-1 | 4.64-1 | 4.50-1, 4.25-1 | 4.42-1 | 4.50-1 |
| Wheelbase | 122 in. | 125 in. | 119 in. | 114 in. | 121, 127 in. | 116 in. |
| Sizes of Tires | 32x4 | 34x4½ | 34x4, F. & R. | 32x3½ | 34x4, 35x4½ | 32x4 |
| Wheels (Wood or Wire) | Optional | Wood | Wood | Wood | Wood | Wood |
| Type of Rear Springs | ½ elliptic | ½ elliptic | ¾ elliptic | Cantilever | ½ elliptic | Cantilever |
| Drive and Control | Centre | Left, centre | Left, centre | Left, centre | Left, centre | Left, centre |
| Type Gearset Bearings | Ball | Ball | Ball | Ball | Ball | Ball |
| Rear Axle Bearings | Roller | Roller | Ball | B. & R. | Ball | Ball |
| Front Axle Bearings | Ball | Roller | Ball | Roller | Ball | Ball |
| No. Eng. Main Bearings | Three | Three | Three | Three | Three | Three |

# SPECIFICATIONS OF 1918'S SIX-CYLINDER PASSENGER CARS.

General Price Lists, Data on Seating Capacities and Body Types Are Given in the Buyers' Index, Pages 42-46.

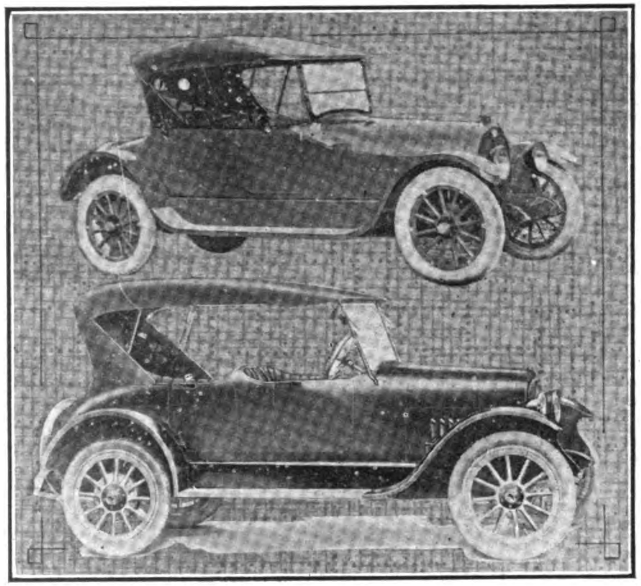
| Name of Car | Hudson | Jones | Jordan | KisselKar | Kline Kar | Lenox |
|---|---|---|---|---|---|---|
| No. or Name of Model | Super Six | 26 B | Sixty | 100 Point Six | 6-38 G. A. | 18 |
| Price | $1950 | $1675 | $1995, $3500 | $1295 | $1495 | $2650 |
| Bore and Stroke | 3.50x5.00 | 3.500x5.125 | 3.50x5.25 | 3.25x5.00 | 3.25x4.50 | 3.675x5.500 |
| Horsepower (S. A. E.) | 29.40 | 29.40 | 29.40 | 25.35 | 25.35 | 33.70 |
| Piston Displacement | 288.6 | 303.1 | 303.0 | 248.9 | 225.0 | 364.5 |
| Cylinders, Shape, Cast | 6-L-Block | 6-L-Block | 6-L-Block | 6-L-Block | 6-L-Block | 6-L-Block |
| Who Makes Engine | Hudson | Lewis | Continental | Kissel | Continental | Buda |
| Location of Valves | Right | Side | Right | Right | Right | Side |
| Type of Camshaft Drive | Helical gear | Helical | Gear | Hel. gear | Helical | Helical |
| Type of Cooling System | Centrifugal | Ther.-Syp | Pump | Centri. pump | Pump | Pump |
| Lubrication System | Cir. splash | F. F., Spl. | F. F., Spl. | Splash | F. F., Spl. | Splash |
| Type of Pump | Plunger | Gear | Plunger | Gear | Plunger | Gear |
| Ignition System Type | Single | Single | Single | Single | Single | Single |
| Make and Control | Delco, H. & A. | Auto-Lite, H. | Delco, H. & A. | Remy, hand | West., hand | Eisemann, H. |
| Make of Carburetor | Hudson | Stromberg | Stromberg | Stromberg | Rayfield | Zenith |
| Method of Fuel Feed | Vacuum | Vacuum | Vacuum | Vacuum | Vacuum | Vacuum |
| Starting System Make | Delco | Auto-Lite | Bijur | Kissel, Remy | Westinghouse | Bijur |
| Light. Sys., Make, Volt | Delco, 6 | Auto-Lite, 6 | Bijur, 6 | Remy, 6 | Westinghouse | Bijur |
| Type, Make of Clutch | Disc, Hudson | Disc, B. & B. | Disc | Cone, Warner | Disc, B. & B. | Disc |
| Type, Make of Gearset | S-U., M., Hud. | S-Unit, M | S-U., M., Det. | S-U., M., War. | S-Unit, M | S-Unit, M |
| Speed Ratios | Three | Three | Three | Three | Three | Three |
| Drive Through | Springs | Springs | Springs | Springs | Springs | Springs |
| Type, Make Rear Axle | ½ F., Timken | F. F., Timken | ½ F., Timken | Kissel, float | F. F., Hess | Full floating |
| Direct Drive Ratio | 4.45-1 | 5.00-1 | 4.46-1 | 4.58-1 | 4.75-1 | 4.00-1 |
| Wheelbase | 125 in. | 125 in. | 127 in. | 117 in. | 120 in. | 130 in. |
| Sizes of Tires | 35x4½ | 34x4 | 35x4½ | 34x4 | 34x4 | 34x4½, F. & R. |
| Wheels (Wood or Wire) | Wood | Wood | Wood | Wood | Wood, wire | Wood |
| Type of Rear Springs | ½ elliptic | ½ elliptic | ½ elliptic | ¾ elliptic | ¾ elliptic | ½ elliptic |
| Drive and Control | Left, centre | Left, centre | Left, centre | Left, centre | Left, centre | Left, centre |
| Type Gearset Bearings | Roller | Roller | Ball | Ball, plain | Ball | ...... |
| Rear Axle Bearings | Roller | Roller | Roller | Roller | Roller | ...... |
| Front Axle Bearings | Roller | Roller | Roller | Roller | Roller | ...... |
| No. Eng. Main Bearings | Four | Three | Three | Three | Three | Three |



Above, Elcar E-4, E-6; Below, Moon Club Roadster.

| Name of Car | Lexington | Lexington | Liberty | Locomobile | Locomobile | McFarlin Six | Madison | Malbohm | Marmon | Mitchell |
|---|---|---|---|---|---|---|---|---|---|---|
| No. or Name of Model | 6-O | 6-R | 10-B | 38, Series Two | 48, Series Two | 127 | A and B | B | 34 | D 40 |
| Price | $1325 | $1585 | $1350 | $5000 | $5950, $7400 | $3500 | $1485 | $975 | $3550 | $1250, $1950 |
| Bore and Stroke | 3.25x4.50 | 3.25x4.50 | 3.25x4.50 | 4.25x5.00 | 4.50x5.50 | 4.50x6.00 | 3.125x5.000 | 3.125x4.250 | 3.750x5.125 | 3.25x5.00 |
| Horsepower (S. A. E.) | 25.39 | 25.39 | 25.40 | 43.35 | 48.60 | 48.60 | 23.44 | 23.44 | 33.75 | 25.35 |
| Piston Displacement | 224.0 | 224.0 | 216.0 | 425.4 | 525.0 | 572.55 | 230.1 | 195.6 | 339.63 | 248.8 |
| Cylinders, Shape, Cast | 6-L-Block | 6-L-3s | 6-L-Block | 6-T-2s | 6-T-2s | 6-T-Block | 6-L-Block | 6-I-Block | 6-I-Block | 6-L-Block |
| Who Makes Engine | Continental | Continental | Continental | Locomobile | Locomobile | Teetor | Rutenber | Falls | Marmon | Mitchell |
| Location of Valves | Right | Right | Right | R. & L. | R. & L. | R. & L. | Right | Head | Head | Left |
| Type of Camshaft Drive | Helical | Helical | Spiral gear | Helical | Helical | Spiral gear | Helical | Helical | Helical | Helical |
| Type of Cooling System | Pump | Pump | Ther.-Syp. | Pump | Pump | Centrifugal | Pump | Ther.-Syp. | Pump | Pump |
| Lubrication System | F. F., Spl. | F. F., Spl. | F. F., Spl. | F. F., Spl. | F. F., Spl. | F. F., Spl. | Splash | F. F. & Spl. | Force feed | Cir. splash |
| Type of Pump | Plunger | Plunger | Plunger | Gear | Gear | Plunger | Plunger | Plunger | Gear | Plunger |
| Ignition System Type | Single | Single | Single | Tandem dual | Tandem dual | Duplex | Dual | Single | Single | Single |
| Make and Control | Conn., hand | Conn., hand | Delco, hand | Berling, hand | Berling, hand | West., Eise., H. | Remy, hand | At. Kent, hand | Bosch, hand | Conn., hand |
| Make of Carburetor | Rayfield | Rayfield | Stromberg | Loco., B. & B. | Loco., B. & B. | Stromberg | Rayfield | Stromberg | Stromberg | Rayfield |
| Method of Fuel Feed | Vacuum | Vacuum | Vacuum | Pressure | Pressure | Vacuum | Vacuum | Vacuum | Gravity | Vacuum |
| Starting System Make | Westinghouse | Westinghouse | Delco | Westinghouse | Westinghouse | Westinghouse | Remy | Wagner | Bosch | Splitdorf |
| Light. Sys., Make, Volt | Westinghouse | Westinghouse | Delco, 6 | Westinghouse | Westinghouse | West., 6 | Remy | Wagner, 6 | Bosch | Splitdorf, 6 |
| Type, Make of Clutch | Disc | Disc | Disc, B. & B. | Disc, own | Disc | Disc. B. & B. | Disc | Disc, B. & B | Cone | Cone |
| Type, Make of Gearset | S-Unit, M | S-Unit, M | S-U., M., Det. | Selec. amid | Selec. amid. | Selec. amid. | S-Unit, M | S-U., M., Mech | S-Unit, M | Amidship, own |
| Speed Ratios | Three | Three | Three | Four | Four | Three | Three | Three | Three | Three |
| Drive Through | Springs | Springs | Springs | Radius rods | Radius rods | Springs | Springs | Springs | Torque tube | Springs |
| Type, Make Rear Axle | Full floating | Full floating | ½ F., Timken | Full floating | Full floating | F. F., Timken | Full floating | Full floating | ¾ floating | Floating |
| Direct Drive Ratio | 4.75-1 | 5.00-1 | 4.75-1 | 3.85-1 | 3.85-1 | 3 50-1 | 4.64-1 | 4.50-1 | 3.69-1 | 4.41-1 |
| Wheelbase | 116 in. | 122 in. | 115 in. | 139 in. | 142 in. | 136 in. | 115, 120, 124 in. | 115 in. | 136 in. | 120 in. |
| Sizes of Tires | 32x4, F. & R. | 34x4, F. & R. | 32x4 | 36x4½, 37x5 | 37x5, F. & R. | 35x5 | 34x4, F. & R. | 32x3½ | 32x4½, 35x5 | 32x4, 33x4½ |
| Wheels (Wood or Wire) | Wood | Wood | Wood | Wood | Wood | Wood | Wood | Wood | Wire | Wood |
| Type of Rear Springs | ¾ elliptic | ½ elliptic | ½ elliptic | ¾ elliptic | ¾ elliptic | ½ elliptic | ¾ elliptic | ½ elliptic | ½ elliptic | Cantilever |
| Drive and Control | Left, centre | Left, centre | Left, centre | Left, centre | Left, centre | Left, centre | Left, centre | Left, centre | Left, centre | Left, centre |
| Type Gearset Bearings | Ball | Ball | Ball | Ball | Ball | Roller | Ball | Ball | B. R. & P. | B. & R. |
| Rear Axle Bearings | B. & R. | B. & R. | Roller | Ball | Ball | Roller | Ball | Roller | B. & R. | Roller |
| Front Axle Bearings | Ball | Roller | Roller | Roller | Roller | Roller | Ball | Ball | Roller | Roller |
| No. Eng. Main Bearings | Three | Three | Three | Seven | Seven | Four | Three | Three | Four | Three |

| Name of Car | Mitchell | Moon | Moon | Moon | Napoleon | Nash | Nash Six | National | Oakland | Overland |
|---|---|---|---|---|---|---|---|---|---|---|
| No. or Name of Model | C-42 | 6-36 | 6-45 | 6-66 | 18-39 | 671 | 681, 683, 684 | Highway Six | Sensible 6 34-B | 85-6 |
| Price | $1490, $2850 | $1195 | $1685 | $1850 | $1285 | $1465 | $1295, $1985 | $1995 | $990 | $1130 |
| Bore and Stroke | 3.50x5.00 | 2.875x4.500 | 3.25x4.50 | 3.50x5.25 | 3.25x4.50 | 3.500x4.625 | 3.25x5.00 | 3.50x5.25 | 2.812x4.750 | 3.25x4.50 |
| Horsepower (S. A. E.) | 29.40 | 19.84 | 25.25 | 29.40 | 25.30 | 29.40 | 25.35 | 29.40 | 18.90 | 25.35 |
| Piston Displacement | 288.6 | 175.0 | 224.4 | 303.1 | 224.0 | 267.0 | 249.0 | 303.0 | 177.0 | 224.0 |
| Cylinders, Shape, Cast | 6-L-Block | 6-L-Block | 6-L-Block | 6-L-Block | 6-L-Block | 6-L-Block | 6-L-Block | 6-L-Block | 6-I-Block | 6-L-Block |
| Who Makes Engine | Mitchell | Continental | Continental | Continental | Continental | Nash | Nash | Own | Northway | Continental |
| Location of Valves | Left | Right | Right | Right | Side | Right | Head | Right | Head | Right |
| Type of Camshaft Drive | Helical | Helical | Helical | Helical | Helical gear | Chain | Gear | Helical | Helical | Helical |
| Type of Cooling System | Pump | Pump | Pump | Pump | Pump | Pump | Pump | Pump | Pump | Pump |
| Lubrication System | Cir. splash | F. F., Spl. | F. F., Spl. | F. F., Spl. | F. F., Spl. | F. F., Spl. | Pump, splash | F. F., Spl. | Force feed | F. F., Spl. |
| Type of Pump | Plunger | Plunger | Plunger | Plunger | Plunger | Gear | Gear | Piston | Gear | Gear |
| Ignition System Type | Single | Single | Single | Single | Single | Single | Single | Single | Single | Single |
| Make and Control | Conn., hand | Delco, hand, A. | Delco, H. & A. | Delco, H. & A. | Delco, H. & A. | Delco, hand | Delco, hand | Dixie, hand | Remy, hand | Conn., hand |
| Make of Carburetor | Stromberg | Tillotson | Rayfield | Rayfield | ...... | Rayfield | Marvel | Rayfield | Marvel | Tillotson |
| Method of Fuel Feed | Vacuum | Gravity | Vacuum | Vacuum | Vacuum | Vacuum | Vacuum | Vacuum | Vacuum | Vacuum |
| Starting System Make | Westinghouse | Wagner | Delco | Delco | Delco | Nash-Bijur | Special | Westinghouse | Remy | Auto-Lite |
| Light. Sys., Make, Volt | West., 6 | Delco, 6 | Delco, 6 | Delco, 6 | Delco, 6 | Bijur, 6 | Delco, 6 | West., 7 | Remy, 6 | Auto-Lite |
| Type, Make of Clutch | Cone | D. D. | Disc | Disc | Disc, B. & B. | Disc | Disc | Cone, own | Cone, North. | Cone |
| Type, Make of Gearset | Amidship, own | S-Unit, M | S-Unit, M | S-Unit, M | Selec., Detroit | ...... | Selective | S-Unit, M | S-Un., M., W. | S-Unit, X |
| Speed Ratios | Three | Three | Three | Three | Three | Three | Three | Three | Three | Three |
| Drive Through | Springs | Torque rod | Springs | Springs | ...... | Springs | Springs | Springs | Springs | Torque rod |
| Type, Make Rear Axle | Full floating | Timken | Full floating | ½ floating | F. F., Timken | ½ float., own | ½ floating | F. F., Columbia | Full floating | ¾ floating |
| Direct Drive Ratio | 4.41-1 | 4.75-1 | 4.75-1 | 4.50-1 | 4.50-1 | 4.50-1 | 4.50-1 | 4.60-1 | 4.50-1 | 4.60-1 |
| Wheelbase | 127 in. | 114 in. | 125 in. | 125 in. | 115 in. | 125 in. | 121, 127 in. | 128 in. | 112 in. | 116 in. |
| Sizes of Tires | 34x4 | 32x3½ | 34x4 | 35x4½ | 24x4 | 34x4 | 34x4 | 34x4½ | 32x4 | 32x4, F. & R. |
| Wheels (Wood or Wire) | Wood | Wood | Wood | Wood | Wood | Wood | Wood | Wood | Wood | Wood |
| Type of Rear Springs | Cantilever | ½ elliptic | ½ elliptic | ½ elliptic | ¾ elliptic | ¾ elliptic | ½ elliptic | Cantilever | ½ elliptic | Cantilever |
| Drive and Control | Left, centre | Left, centre | Left, centre | Left, centre | Left, centre | Left, centre | Left, centre | Centre | Left, centre | Left, centre |
| Type Gearset Bearings | B. & R. | R. & P. | Ball | Ball | Ball | Roller | Roller | Ball | Ball | B. & R. |
| Rear Axle Bearings | Roller | Roller | Roller | Roller | Roller | Roller | Roller | Roller | R. & B. | B. & R. |
| Front Axle Bearings | Roller | Roller | Roller | Roller | Roller | Roller | Roller | Roller | Cup and cone | Roller |
| No. Eng. Main Bearings | Three | Three | Three | Three | Three | Three | Three | Three | Three | Three |

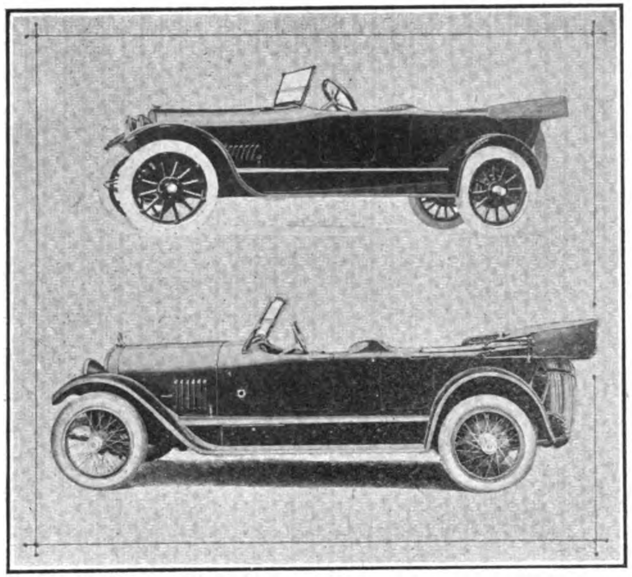


Above, Apperson 12 Chummy Rdstr; Below, Allen 41 Rdstr.

| Name of Car | Owen Magnetic | Owen Magnetic | Paige | Paige | Pan-American | Paterson |
|---|---|---|---|---|---|---|
| No. or Name of Model | W-42 | M-25 | 39 | 55 | G-6-5 | 6-45 |
| Price | $5300 | $3500 | $1330 | $1775 | $1500 | $1265, $1295 |
| Bore and Stroke | 4.00x5.25 | 3.50x5.25 | 3.125x5.000 | 3.50x5.25 | 3.125x5.000 | 3.25x4.50 |
| Horsepower (S. A. E.) | 38.40 | 29.45 | 23.44 | 29.40 | 23.40 | 25.00 |
| Piston Displacement | 414.7 | 203.0 | 230.0 | 303.0 | 230.0 | ...... |
| Cylinders, Shape, Cast | 6-3s | 6-L-Block | 6-L-Block | 6-L-Block | 6-L-Block | 6-L-Block |
| Who Makes Engine | Weidely | Continental | Rutenber | Continental | Rutenber | Continental |
| Location of Valves | Overhead | Right | Right | Right | Right | Right |
| Type of Camshaft Drive | Helical | Helical | Helical | Helical | Helical gear | Gear |
| Type of Cooling System | Pump | Pump | Pump | Pump | Centrifugal | Pump |
| Lubrication System | F. F., Spl. | F. F. & Spl. | F. F., Spl. | F. F., Spl. | F. F., Spl. | F. F., Spl. |
| Type of Pump | Gear | Plunger | Plunger | Plunger | Plunger | Plunger |
| Ignition System Type | Single | Single | Single | Single | Single | Double |
| Make and Control | Bosch, hand | Bosch, hand | Remy, hand | Remy, hand | G. & D., hand | Delco, hand |
| Make of Carburetor | Zenith | Zenith | Stromberg | Rayfield | Rayfield | Stromberg |
| Method of Fuel Feed | Vacuum | Vacuum | Gravity | Gravity | Vacuum | Vacuum |
| Starting System Make | Owen magnetic | Owen magnetic | Gray & Davis | Gray & Davis | Gray & Davis | Delco |
| Light. Sys., Make, Volt | Owen magnetic | Owen magnetic | G. & D., 6 | G. & D., 6 | G. & D., 6 | Delco, 6 |
| Type, Make of Clutch | Owen magnetic | Owen magnetic | Disc | Disc | Disc, B. & B. | Cone |
| Type, Make of Gearset | Transmission | Transmission | S-Unit, M | S-Unit, M | S-U., M., War. | S-U., M., Det. |
| Speed Ratios | ...... | ...... | Three | Three | Three | Three |
| Drive Through | Springs | Springs | Springs | Springs | Springs | Springs |
| Type, Make Rear Axle | F. F., A. B. B. | Full float. | ¾ F., Salis. | ¾ F., Salis. | ½ F., Timken | F. F., Hess |
| Direct Drive Ratio | 4.00-1 | 4.85-1 | 4.41-1 | 4.36-1 | 4.45-1 | 4.25-1 |
| Wheelbase | 142 in. | 125 in. | 117 in. | 127 in. | 120 in. | 117 in. |
| Sizes of Tires | 35x5 | 34x4½, F. & R. | 32x4 | 35x4¼ | 33x4½ | 32x4 |
| Wheels (Wood or Wire) | Optional | Wood | Wood | Wood | Wood | Wood |
| Type of Rear Springs | ½ elliptic | ½ elliptic | Cantilever | Cantilever | ½ elliptic | ¾ elliptic |
| Drive and Control | Left, hand | Left | Left | Left | Left, centre | Left, centre |
| Type Gearset Bearings | Ball | Ball | B. & R. | B. & R. | Ball | Ball |
| Rear Axle Bearings | Bock | Roller | B. & R. | B. & R. | Roller | Roller |
| Front Axle Bearings | Bock | Roller | Roller | Roller | Roller | Ball |
| No. Eng. Main Bearings | Four | Three | Three | Three | Three | Three |

# SPECIFICATIONS OF 1918'S SIX-CYLINDER PASSENGER CARS.

General Price Lists, Data on Seating Capacities and Body Types Are Given in the Buyers' Index, Pages 42-46.



Above, Jackson Eight; Below, Mercer Sporting Model.

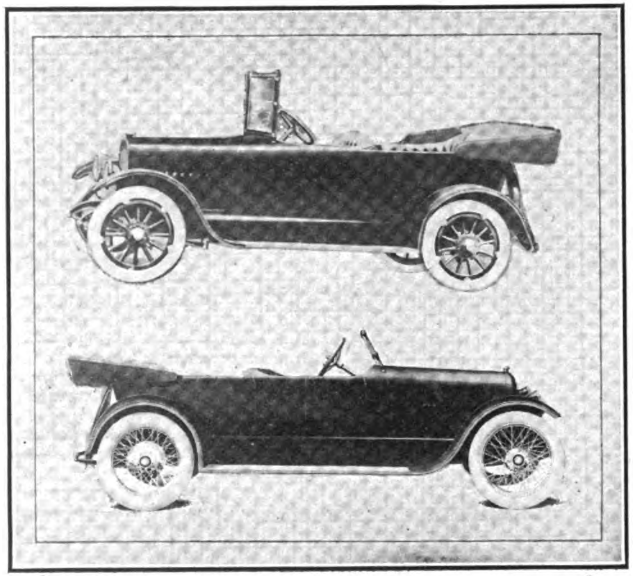
| Name of Car | Pierce-Arrow | Pierce-Arrow | Pierce-Arrow | Pilot | Premier | Reo |
|---|---|---|---|---|---|---|
| No. or Name of Model | 66-A-4 | 38-C-4 | 48-B-4 | 6-45 | 6 C | M |
| Price | $6500 | $4800 | $5500 | $1295 | $2285 | $1385 |
| Bore and Stroke | 5.00x7.00 | 4.00x5.50 | 4.50x5.50 | 3.125x5.000 | 3.375x5.500 | 3.562x5.125 |
| Horsepower (S. A. E.) | 60.20 | 38.40 | 48.60 | 23.44 | 27.30 | 30.40 |
| Piston Displacement | 824.7 | 414.7 | 524.8 | 230.1 | 295.22 | 306.6 |
| Cylinders, Shape, Cast | 6-T-2s | 6-T-2s | 6-T-2s | 6-L-Block | 6-I-Block | 6-L-Block |
| Who Makes Engine | Pierce-Arrow | Pierce-Arrow | Pierce-Arrow | Teetor | Premier | Reo |
| Location of Valves | R. & L. | R. & L. | R. & L. | Right | Head | Side |
| Type of Camshaft Drive | Spur | Helical | Helical | Helical | Helical | Helical gear |
| Type of Cooling System | Pump | Pump | Pump | Pump | Pump | Pump |
| Lubrication System | Force feed | Force feed | Force feed | F. F., Spl. | F. F., Spl. | F. F., Spl. |
| Type of Pump | Gear | Gear | Gear | Plunger | Gear | Plunger |
| Ignition System Type | Double | Double | Double | Single | Single | Single |
| Make and Control | Bosch, hand | Bosch, hand | Bosch, hand | Delco, H. & A. | Delco, auto | Remy, hand |
| Make of Carburetor | Pierce-Arrow | Pierce-Arrow | Pierce-Arrow | Tillotson | Johnson | Rayfield |
| Method of Fuel Feed | Pressure | Pressure | Pressure | Vacuum | Vacuum | Vacuum |
| Starting System Make | Westinghouse | Westinghouse | Westinghouse | Delco | Delco | Remy |
| Light. Sys., Make, Volt | Westinghouse | Westinghouse | Westinghouse | Delco | Delco, 6 | Remy, 6 |
| Type, Make of Clutch | Cone | Cone | Cone | Disc | Disc, B. & B. | Disc, Reo |
| Type, Make of Gearset | Selec. amid. | Selec., amid. | Selec., amid. | S-Unit, M | S-Unit, M | Selec., Reo |
| Speed Ratios | Four | Four | Four | Three | Three | Three |
| Drive Through | Springs | Springs | Springs | Springs | Springs | Torque arm |
| Type, Make Rear Axle | ½ floating | ½ floating | ½ floating | Floating | ½ floating | Reo |
| Direct Drive Ratio | Optional | Optional | Optional | 4.50-1 | 4.45-1 | 4.30-1 |
| Wheelbase | 147½ in. | 134 in. | 142 in. | 120 in. | 125½ in. | 126 in. |
| Sizes of Tires | 36x5½, F. & R. | 35x5, F. & R. | 34x4½, F. & R. | 32x4, F. & R. | 32x4½ | 34x4½ |
| Wheels (Wood or Wire) | Wood | Wood | Wood | Wood | Wood | Wood |
| Type of Rear Springs | ¾ elliptic | ¾ elliptic | ¾ elliptic | Cantilever | ½ elliptic | Cantilever |
| Drive and Control | Right | Right | Right | Left, centre | Left, centre | Left, centre |
| Type Gearset Bearings | Ball | Ball | Ball | Ball | Ball | Roller |
| Rear Axle Bearings | B. & R. | B. & R. | B. & R. | Roller | Roller | Roller |
| Front Axle Bearings | Roller | Roller | Roller | Roller | Roller | Roller |
| No. Eng. Main Bearings | Seven | Seven | Seven | Three | Three | Three |

| Name of Car | Roamer | Saxon | Sayers | Scripps-Booth | Scripps-Booth | Singer | Stephens | Studebaker | Studebaker | Velie-Biltwel |
|---|---|---|---|---|---|---|---|---|---|---|
| No. or Name of Model | D 6-90 | S 4 | Sayers Six | Six 39, Six 40 | Six 40 | 18 | 70, 74, 75, 78 | Light Six | Big Six | 38 |
| Price | $3150 | $935 | $1295 | $1250 | $1425 | $3800 | $1485 | ...... | ...... | $1340 |
| Bore and Stroke | 3.75x5.75 | 2.875x4.500 | 3.25x4.50 | 2.812x4.750 | 2.812x4.750 | 4.00x5.50 | 3.25x4.50 | 3.50x5.00 | 3.875x5.000 | 3.25x4.50 |
| Horsepower (S. A. E.) | 33.80 | 19.84 | 25.35 | 21.70 | 21.70 | 38.40 | 25.40 | 29.40 | 36.04 | 25.35 |
| Piston Displacement | ...... | 175.3 | 224.0 | 170.9 | 170.9 | 414.7 | 224.0 | 318.63 | 353.8 | 224.0 |
| Cylinders, Shape, Cast | Six | 6-L-Block | 6-L-Block | 6-V-Block | 6-V-Block | 6-T-2s | 6-I-Block | 6-L-Block | 6-L-Block | 6-L-Block |
| Who Makes Engine | Duesenberg | Continental | Continental | Mason | Mason | H-Spill | Own | Studebaker | Studebaker | Continental |
| Location of Valves | ...... | Right | Side | Head | Head | R. & L. | Head | Left | Left | Right |
| Type of Camshaft Drive | ...... | Helical | Helical gear | Helical | Helical | Helical | Helical | Helical | Helical | Helical |
| Type of Cooling System | ...... | Ther.-Syp. | Pump | Centrifugal | Centrifugal | Pump | Ther.-Syp. | Pump | Pump | Pump |
| Lubrication System | Splash | Splash | F. F., Spl. | Force feed | Force feed | Force feed | Force feed | F. F., Spl. | F. F., Spl. | F. F., Spl. |
| Type of Pump | ...... | Plunger | Plunger | Gear | Gear | Gear | Gear | Gear | Gear | Plunger |
| Ignition System Type | ...... | Single | Single | Single | Single | Single | Single | Single | Single | Dual |
| Make and Control | ...... | Remy, hand | Delco, H. & A. | Remy, auto | Remy, auto | Bosch, hand | Delco, hand | Remy, hand | Remy, hand | Remy, auto |
| Make of Carburetor | Stromberg | Ray. or Strom. | ...... | Marvel | Marvel | Rayfield | Stromberg | ...... | ...... | Rayfield |
| Method of Fuel Feed | ...... | Gravity | Vacuum | Vacuum | Vacuum | Vacuum | Vacuum | Vacuum | Vacuum | Vacuum |
| Starting System Make | Bijur | Wagner | Delco | Remy | Remy | Westinghouse | Delco | Stude., Wag. | Stude., Wag. | Remy |
| Light. Sys., Make, Volt | ...... | Wagner | Delco, 6 | Remy, 6 | Remy, 6 | Westinghouse | Delco, 6 | Stude., Wag., 6 | Stude., Wag., 6 | Remy |
| Type, Make of Clutch | Disc | Disc | Disc, B. & B. | Cone | Cone | Disc | Disc, B. & B. | Cone | Cone | Disc |
| Type, Make of Gearset | Selective | S-Unit, X | ...... | S-Unit, M | S-Unit, M | S-Unit, M | S-Unit, M | Selec., amid | Selec., amid | S-Unit, M |
| Speed Ratios | Three | Three | ...... | Three | Three | Four | Three | Three | Three | Three |
| Drive Through | ...... | Torque rod | Springs | Springs | Springs | Springs | Springs | Springs | Springs | Springs |
| Type, Make Rear Axle | Timken | ¾ floating | Floating | Full floating | Full floating | Full floating | F. F., Hess | ½ F., Stude. | ½ floating | ½ floating |
| Direct Drive Ratio | 3.50-1 | 4.75-1 | ...... | 4.80-1 | 4.80-1 | 3.77-1 | 4.75-1 | 4.00-1 | 3.70-1 | 4.75-1 |
| Wheelbase | 138 in. | 112 in. | ...... | 112 in. | 112 in. | 136 in. | 117½ in. | 119 in. | 126 in. | 115 in. |
| Sizes of Tires | 34x4½ | 33x3½, F. & R. | 32x4 | 32x4 | 32x4 | 35x5, F. & R. | 32x4 | 32x4 | 33x4½ | 32x4, F. & R. |
| Wheels (Wood or Wire) | Wire | Wood | ...... | Wood | Wood | Wood | Wood | Wood | Wood | Wood |
| Type of Rear Springs | ½ elliptic | Cantilever | ½ elliptic | ½ elliptic | ½ elliptic | Cantilever | ½ elliptic | ½ elliptic | ½ elliptic | ¾ elliptic |
| Drive and Control | Left, centre | Left, centre | ...... | ...... | ...... | Left, centre | Left, centre | Left, centre | Left, centre | Left, centre |
| Type Gearset Bearings | ...... | Plain | B. & R. | Ball | Ball | Ball | Ball | Roller | Roller | Ball |
| Rear Axle Bearings | ...... | Roller | ...... | Ball | Ball | Roller | R. & B. | Roller | Roller | Roller |
| Front Axle Bearings | ...... | Roller | ...... | Ball | Ball | Roller | Roller | Roller | Roller | Roller |
| No. Eng. Main Bearings | ...... | Three | Three | Three | Three | Three | Three | Four | Four | Three |

# THE EIGHT-CYLINDER PASSENGER CARS OFFERED FOR 1918.

General Price Lists, Data on Seating Capacities and Body Types Are Given in the Buyers' Index, Pages 42-46.

| Name of Car | Velie-Biltwel | Westcott | Willys-Six | Winton | Winton | Apperson | Cadillac | Chevrolet | Cole Eight | Cunningham |
|---|---|---|---|---|---|---|---|---|---|---|
| No. or Name of Model | 39 | Series 18 | 89 | 33 | 48 | 8-18 | Type 57 | Eight Cylinder | 870, 71, 72 | V |
| Price | $1595 | $1940 | $1365 | $2950 | $3500 | $2550, $3300 | $2805 | $1385 | $2395 | $4750 |
| Bore and Stroke | 3.50x5.25 | 3.50x5.25 | 3.50x5.25 | 3.75x5.25 | 4.50x5.50 | 3.25x5.00 | 3.125x5.125 | 3.375x4.000 | 3.50x4.50 | 3.75x5.00 |
| Horsepower (S. A. E.) | 29.40 | 29.40 | 29.40 | 33.75 | 48.60 | 33.80 | 31.25 | 36.45 | 39.22 | 45.00 |
| Piston Displacement | 303.1 | 303.0 | 303.0 | 347.9 | 524.8 | 332.0 | 314.0 | 286.0 | 346.4 | 441.8 |
| Cylinders, Shape, Cast | 6-L-Block | 6-L-Block | 6-L-Block | 6-L-2s | 6-L-2s | 8-L-Block | 8-V-Block | 8-I-4s | 8-V-4s | 8-L-4s |
| Who Makes Engine | Continental | Continental | Continental | Winton | Winton | Apperson | Cadillac | Own | Northway | Cunningham |
| Location of Valves | Right | Right | Right | Right | Right | Side | Inside | Head | Inside | Left |
| Type of Camshaft Drive | Helical | Helical | Helical | Chain | Chain | Gear | Chain | Helical | Helical | Helical |
| Type of Cooling System | Pump | Pump, thermo | Pump | Pump | Pump | Ther.-Syp. | Pump | Pump | Pump | Pump |
| Lubrication System | F. F., Spl. | F. F., Spl. | F. F. & Spl. | Force feed | Force feed | Force feed | Force feed | Splash | Force feed | Force feed |
| Type of Pump | Plunger | Plunger | Plunger | Plunger | Plunger | Gear | Gear | Gear | Kellogg | Gear |
| Ignition System Type | Single | Single | Single | Single | Single | Dual | Single | Single | Delco | Single |
| Make and Control | Remy, auto | Delco, H. & A. | Conn., hand | Bosch, hand | Bosch, hand | Remy | Delco, H. & A. | Remy, hand | Northway | Delco, H. & A. |
| Make of Carburetor | Rayfield | Rayfield | Tillotson | Rayfield | Rayfield | Johnson | Cadillac | Zenith | Stromberg | Stromberg |
| Method of Fuel Feed | Vacuum | Vacuum | Vacuum | Vacuum | Vacuum | Vacuum | Pressure | Vacuum | Vacuum | Vacuum |
| Starting System Make | Remy | Delco | Auto-Lite | Bijur | Bijur | Bijur | Delco | Auto-Lite | Delco | Westinghouse |
| Light. Sys., Make, Volt | Remy | Delco, 6 | Auto-Lite | Bijur, 6 | Bijur, 6 | Bijur | Delco, 6 | Auto-Lite, 6 | Delco, 6 | West., 6 |
| Type, Make of Clutch | Disc | Disc | Cone | Disc | Disc | Disc, own | Disc | Cone, own | Cone, North. | Disc |
| Type, Make of Gearset | S-Unit, M | S-Unit, M | S-Unit, X | S-Unit, M | S-Unit, M | Selec., own | Selec., Cadillac | S.-U., M., own | Selec., North. | S-Unit |
| Speed Ratios | Four | Three | Three | Four | Four | Three | Three | Three | Three | Three |
| Drive Through | Springs | Springs | Torque rod | Springs | Springs | Springs | Springs | Springs | Springs | Springs |
| Type, Make Rear Axle | ½ floating | ¾ floating | Full floating | Full floating | Full floating | Demount., own | F. F., Timken | ¾ F., own | Columbia | F. F., Timken |
| Direct Drive Ratio | 4.08-1 | 4.45-1 | 4.66-1 | 4.45-1 | 4.08-1 | 4.25-1 | 4.43-1 | 4.25-1 | 4.45-1 | 4.09-1 |
| Wheelbase | 124 in. | 125 in. | 120 in. | 128 in. | 138 in. | 130 in. | 125, 132 in. | 120 in. | 127 in. | 132, 142 in. |
| Sizes of Tires | 33x4½ | 35x4½, F. & R. | 33x4½, F. & R. | 36x4½, F. & R. | 37x5, F. & R. | 34x4 | 35x5, 34x4½ | 34x4 | 33x5 | 35x5 |
| Wheels (Wood or Wire) | Wood | Wood | Wood | Optional | Optional | Wood | Wood | Wood | Wood | Optional |
| Type of Rear Springs | ¾ elliptic | Cantilever | Cantilever | ¾ elliptic | ¾ elliptic | ¾ elliptic | Platform | ½ cantilever | ½ elliptic | ¾ elliptic |
| Drive and Control | Left, centre | Left, centre | Left, centre | Left, centre | Left, centre | ...... | Left, centre | Left, centre | Left, centre | Left, centre |
| Type Gearset Bearings | Ball | B. & R. | Ball | B. & R. | B. & R. | Roller | B. & R. | Ball, plain | B. & R. | Roller |
| Rear Axle Bearings | Roller | Roller | B. & R. | Roller | Roller | Roller | Roller | Roller | Roller | Roller |
| Front Axle Bearings | Roller | Roller | Roller | Roller | Roller | Roller | Roller | Cup and cone | Roller | Roller |
| No. Eng. Main Bearings | Three | Three | Three | Four | Four | Three | Three | Three | Three | Three |



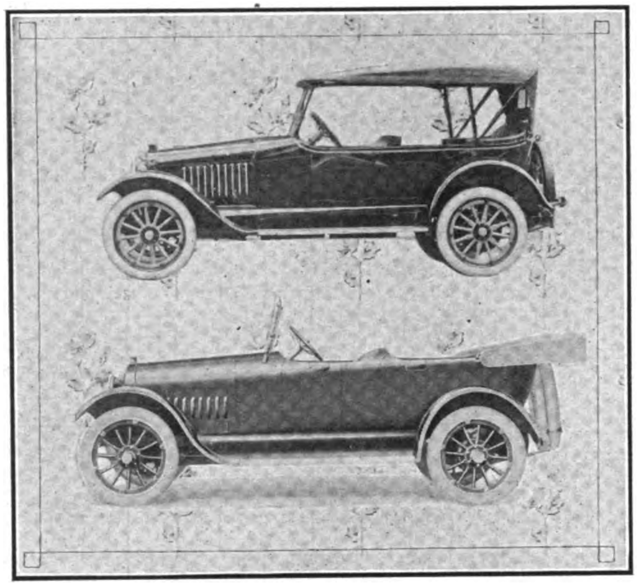
Above, Regal Hi-Power Four; Below, Maibohm Model B.

| Name of Car | Daniels | Douglas Eight | Economy | Hollier | Jackson | King |
|---|---|---|---|---|---|---|
| No. or Name of Model | B | G | 8-48 | 188 | 349 | EE |
| Price | $3100 | $2000 | $1395 | $1285 | $1495, $2195 | ...... |
| Bore and Stroke | 3.25x5.00 | 3.25x5.00 | 3.00x3.50 | 3.00x4.25 | 3.00x3.50 | 3.00x5.00 |
| Horsepower (S. A. E.) | 33.80 | 33.80 | 28.80 | 28.80 | 28.80 | 28.80 |
| Piston Displacement | 331.8 | 331.0 | 198.0 | 240.3 | 198.0 | 282.6 |
| Cylinders, Shape, Cast | 8-L-4s | 8-L-Block | 8-I-4s | 8-L-Block | 8-V-Block | 8-V-4s |
| Who Makes Engine | H.-Spill. | Her.-Spillman | Ferro | Own | Ferro | King |
| Location of Valves | Inside | Inner side | Head | Inside | Head | Inside |
| Type of Camshaft Drive | Helical | ...... | Hel. gear | Helical | Helical | Chain |
| Type of Cooling System | Pump | Pump | Ther.-Syp. | Ther.-Syp. | Ther.-Syp. | Ther.-Syp. |
| Lubrication System | Force feed | Force feed | Force feed | Pressure | Force feed | Force feed |
| Type of Pump | Gear | Gear | ...... | Gear | Gear | Gear |
| Ignition System Type | Single | Single | Single | Single | Single | Single |
| Make and Control | West., hand | West., hand | Conn., hand | Atwater Kent | A. L., ½ auto. | At. Kent, hand |
| Make of Carburetor | Zenith | Zenith | Zenith | Stewart | Zenith | Ball & Ball |
| Method of Fuel Feed | Vacuum | Vacuum | Gravity | Vacuum | Vacuum | Vacuum |
| Starting System Make | West. | Westinghouse | Dyneto | Aplco | Auto-Lite | Bijur |
| Light. Sys., Make, Volt | West. | West., 6 | Dyneto, 6 | Aplco, 6 | Auto-Lite, 6 | Bijur, 6 |
| Type, Make of Clutch | Disc | Disc, B. & B. | D. P. | Cone | Disc | Disc, B. & B. |
| Type, Make of Gearset | S-Unit, M | Selec., G. L. | Selec., G. L. | S-Unit, M | S-U., M., covert | S-U., M., King |
| Speed Ratios | Three | Three | Three | Three | Three | Three |
| Drive Through | Springs | Torque arm | Springs | Springs | Springs | Springs |
| Type, Make Rear Axle | ¾ floating | F. F., Columbia | ...... | Full floating | ¾ F., Salis. | F. F., Columbia |
| Direct Drive Ratio | 4.42-1 | 4.41-1 | 4.90-1 | 4.50-1 | 5.18-1 | 4.58-1, 5.00-1 |
| Wheelbase | 127 in. | 122 in. | 115 in. | 116 in | 118 in. | 120 in. |
| Sizes of Tires | 34x4½, F. & R. | 34x4 | 32x4 | 34x4 | 34x4 | 34x4 |
| Wheels (Wood or Wire) | Wood | Wood | Wood | Wood | Optional | Wood |
| Type of Rear Springs | ½ elliptic | Cantilever | ½ elliptic | Cantilever | Elliptic | Cantilever |
| Drive and Control | Left, centre | Left, centre | Left, centre | Left, centre | Left, centre | Left, centre |
| Type Gearset Bearings | B. & R. | Ball | Ball | Ball | Roller | B. R. P. |
| Rear Axle Bearings | Roller | Roller | Roller | Ball | Roller | Bock Roller |
| Front Axle Bearings | Roller | Roller | Ball | Ball | Ball | Bock Roller |
| No. Eng. Main Bearings | Three | Three | Three | Three | Three | Three |

# THE EIGHT-CYLINDER PASSENGER CARS OFFERED FOR 1918.

**General Price Lists, Data on Seating Capacities and Body Types Are Given in the Buyers' Index, Pages 42-46.**

| Name of Car | Murray | Oldsmobile | Peerless | Scripps-Booth | Standard 8 | Stearns-Knight |
|---|---|---|---|---|---|---|
| No. or Name of Model | 1918 | 45-A | 56 | H | G | S K 8 |
| Price | $2800 | $1467 | $2340 | $1585 | $2450 | $2575 |
| Bore and Stroke | 3.25x5.00 | 2.875x4.750 | 3.125x5.000 | 2.62x5.00 | 3.25x5.00 | 3.25x5.00 |
| Horsepower (S. A. E.) | 33.80 | 26.40 | 32.80 | 22.00 | 33.80 | 33.80 |
| Piston Displacement | 331.8 | 246.7 | 331.8 | 162.0 | 531.8 | 331.8 |
| Cylinders, Shape, Cast | 8-V-Block | 8-L-4s | 8-L-4s | 8-I-4s | 8-V-4s | 8-V-Block |
| Who Makes Engine | H.-Spill. | Oldsmobile | Peerless | Ferro | Her.-Spill | Stearns |
| Location of Valves | Inside | Inside | Inside | Head | Inside | Sleeve |
| Type of Camshaft Drive | Gear | Helical | Spur | Helical gear | Helical | Chain |
| Type of Cooling System | Pump | Pump | Centrifugal | Ther.-Syp. | Pump | Ther.-Syp. |
| Lubrication System | F. F., Spl. | Force feed | Force feed | Full floating | Force feed | F. F., Spl. |
| Type of Pump | Gear | Gear | Gear | Gear | Gear | Gear |
| Ignition System Type | Single | Single | Single | Single | Single | Single |
| Make and Control | Dixie | Delco, H. & A. | At. Kt., H. & A. | Remy, hand | Splitdorf, H. | Remy, hand |
| Make of Carburetor | Zenith | Johnson | Ball & Ball | Zenith | Zenith | Rayfield |
| Method of Fuel Feed | Vacuum | Vacuum | Vacuum | Vacuum | Vacuum | Vacuum |
| Starting System Make | West. | Delco | Auto-Lite | Wagner | Westinghouse | Westinghouse |
| Light. Sys., Make, Volt | West. | Delco | Auto-Lite, 6 | Wagner, 6 | West., 6 | West., 12 |
| Type, Make of Clutch | Disc | Cone | Disc, B.-L. | D., Goodspeed | Disc, B. & B. | Disc |
| Type, Make of Gearset | S-Unit, M | S-Unit, M | S-U., M., B. | Selec., Warner | S-U., M., G. L. | S-Unit, M |
| Speed Ratios | Three | Three | Three | Three | Three | Three |
| Drive Through | Springs | Springs | Springs | Torque rod | Springs | Springs |
| Type, Make Rear Axle | Full floating | Full floating | ½ F., Timken | ¾ F., Russel | ½ F., Timken | ½ float., St. |
| Direct Drive Ratio | 4.47-1 | 4.91-1 | 4.90-1 | 5.38-1 | 4.45-1 | 4.75-1 |
| Wheelbase | 128 in. | 120 in. | 125 in. | 120 in. | 127 in. | 125 in. |
| Sizes of Tires | 34x4½, F. & R. | 33x4, 34x4 | 35x4½ | 32x4 | 34x4½ | 35x4½, F. & R. |
| Wheels (Wood or Wire) | Wood | Wood | Wood | Wire | Wood | Wood |
| Type of Rear Springs | ¾ elliptic | ¾ elliptic | Platform | Cantilever | ½ elliptic | Cantilever |
| Drive and Control | Left, centre | ...... | Left, centre | Left, centre | Left, centre | Left, centre |
| Type Gearset Bearings | Roller | B. & R. | B. & R. | B. & P. | R. & B. | B. & R. |
| Rear Axle Bearings | Roller | Roller | Roller | ...... | Roller | B. & R. |
| Front Axle Bearings | Roller | Roller | Roller | Ball | Roller | Roller |
| No. Eng. Main Bearings | Three | Two | Three | Two | Three | Three |



Above, Chalmers 6-80; Below, Empire Touring Car.

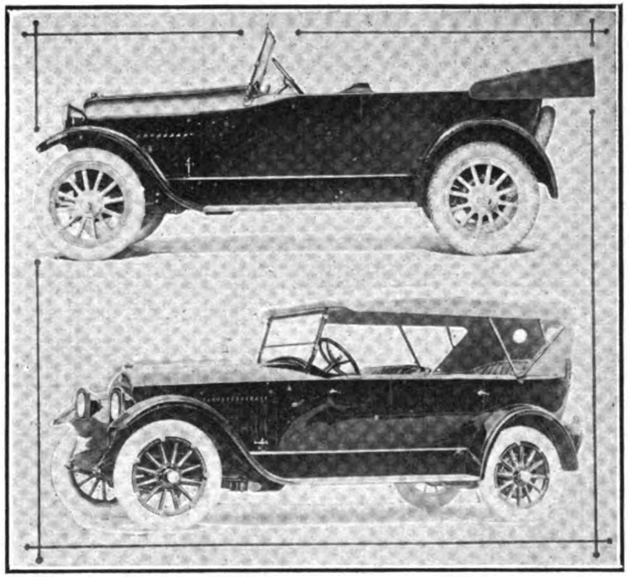
| Name of Car | Willys-Knight | Yale 8 | Austin | The Hal 12 | Haynes L 12 | KisselKar | National | Packard | Packard |
|---|---|---|---|---|---|---|---|---|---|
| No. or Name of Model | 88-8 | M | Highway King | 25 | ...... | Double Six | Highway 12 | 3-25 | 3-35 |
| Price | $2000 | $1950 | $3750 | $3500 | $2785 | $2250 | $2595 | $3700 | $4100 |
| Bore and Stroke | 3.375x4.000 | 3.00x5.00 | 2.875x5.000 | 2.875x5.000 | 2.75x5.00 | 2.875x5.000 | 2.750x4.875 | 3.00x5.00 | 3.00x5.00 |
| Horsepower (S. A. E.) | 45.00 | 28.80 | 39.60 | 39.60 | 36.30 | 39.58 | 39.60 | 43.20 | 43.20 |
| Piston Displacement | ...... | 282.4 | ...... | 389.0 | 356.8 | 389.5 | 370.0 | 424.0 | 424.0 |
| Cylinders, Shape, Cast | 8-V-Block | 8-V-Block | 12-V-3s | 12-V-3s | 12-V-6s | 12-V-3s | 12-V-6s | 12-V-6s | 12-V-6s |
| Who Makes Engine | Willys-Knight | Tur. & Moore | Weidely | Weidely | Haynes | Kissel | Own | Packard | Packard |
| Location of Valves | Sleeves | Inside | Head | Head | Head | Head | Outside | Inside | Inside |
| Type of Camshaft Drive | Chain | Chain | Helical | Helical | Chain | Helical gear | Helical | Chain | Chain |
| Type of Cooling System | Ther.-Syp. | Ther.-Syp. | Pump | Pump | Pump | Centrifugal | Pump | Centrifugal | Centrifugal |
| Lubrication System | Force feed | Cir. splash | Force feed | Force feed | Force feed | Force feed | Force feed | Force feed | Force feed |
| Type of Pump | Plunger | ...... | ...... | Plunger | Gear | Gear | Gear | Gear | Gear |
| Ignition System Type | Single | Single | Two unit | Single | Single | Single | Delco | Single | Single |
| Make and Control | Remy, hand | Remy, hand | Delco, hand | Delco, H. & A. | Delco, H. & A. | Delco, H. & A. | Delco | Delco, H. & A. | Delco, H. & A. |
| Make of Carburetor | Zenith | Zenith | Stromberg | Stromberg | Rayfield | Stromberg | Rayfield | Packard | Packard |
| Method of Fuel Feed | Vacuum | Vacuum | Vacuum | Vacuum | Vacuum | Vacuum | Vacuum | Pressure | Pressure |
| Starting System Make | Auto-Lite | Dyneto | Delco | Westinghouse | Leece-Neville | Delco | Bijur | Packard-Bijur | Packard-Bijur |
| Light. Sys., Make, Volt | Auto-Lite | Dyneto, 6 | Delco, 6 | West., 6 | Leece-Neville | Delco, 6 | Bijur, 7 | P. B., 6-8 | P. B., 6-8 |
| Type, Make of Clutch | Cone | Disc, B. & B. | Disc, Muncie | Disc, Warner | Disc | Disc, Warner | Cone, own | Disc | Disc |
| Type, Make of Gearset | S-Unit, X | S-Unit, M | Selec. Muncie | S-U., M., War. | S-Unit, M | Selec., Warner | S-Unit, M | S-Unit, M | S-Unit, M |
| Speed Ratios | Three | Three | 6 F., 2 R. | Three | Three | Three | Three | Three | Three |
| Drive Through | Torque tube | Springs | Springs | Springs | Springs | Springs | Springs | Torque arm | Torque arm |
| Type, Make Rear Axle | Full floating | ½ F., Timken | F. F., Austin | F. F., Timken | ¾ floating | F., Kissel | F. F., Colum. | Packard, ½ el. | Packard, ½ el |
| Direct Drive Ratio | 4.66-1 | 4.45-1 | 4.75-1, 5.25-1 | 4.90-1 | 4.42-1 | 4.58-1 | 4.59-1 | 4.26-1 | 4.36-1 |
| Wheelbase | 125 in. | 126 in. | 142 in. | 135 in. | 127 in. | 128 in. | 128 in. | 128 in. | 136 in. |
| Sizes of Tires | 34x4½, F. & R. | 34x4 | 34x4½ | 34x4½ | 34x4½, F. & R. | 34x4½ | 34x4½ | 35x5 | 35x5 |
| Wheels (Wood or Wire) | Wood | Wood | Wood | Wood | Wire | Wood | Wood | Wood | Wood |
| Type of Rear Springs | Cantilever | ½ elliptic | D. canti. | ½ elliptic | ½ elliptic | ¾ elliptic | Cantilever | ½ elliptic | ½ elliptic |
| Drive and Control | B. & R. | Left, centre | Left, centre | Left, centre | Left, centre | Left, centre | Centre | Left, centre | Left, centre |
| Type Gearset Bearings | Roller | Ball | Ball | Ball | Ball | Ball, Roller | Ball | Ball | Ball |
| Rear Axle Bearings | Roller | B. & R. | B. & R. | Roller | Ball | Roller | Roller | Ball | Ball |
| Front Axle Bearings | Roller | Roller | Roller | Roller | Ball | Roller | Roller | Roller | Roller |
| No. Eng. Main Bearings | Two | Three | Four | Three | Three | Three | Three | Three | Three |

# THE ELECTRIC PASSENGER CAR MODELS PRESENTED FOR 1918.

General Price Lists, Data on Seating Capacities and Body Types Are Given in the Buyers' Index, Pages 42-46.

| Name of Car | Detroit Electric | Detroit Electric | 100 M. Fritchle | Hupp-Yeats | Hupp-Yeats |
|---|---|---|---|---|---|
| No. or Name of Model | Model 75 | Model 71 | Colonial | 4 Regent B | 5 Patrician |
| Price | $2375 | $2940 | $3600 | $1750 | $2000 |
| Miles Per Charge | 65-100 | 65-100 | 60-100 | 75-90 | 90-100 |
| Maximum Speed | 23 | 23 | 20 | 16 | 16 |
| Motor Type | Series | Series | Compound | Series | Series |
| Battery | Detroit Electric | Detroit Electric | Fritchle, lead | Exide | Exide |
| Controller Type | Lever | Lever | Drum | Barrel | Barrel |
| Speeds Forward | Five | Five | Five | Four | Four |
| Drive to Rear Wheels | Gear | Gear | Worm | Worm | Worm |
| Rear Axle Type | ½ floating | Full floating | ¾ floating | ½ floating | ½ floating |
| Tires, Rear | 33x4½ | 34x4½ | 34x3½ | 33x4 | 33x4 |
| Steer, Control | Lever | Lever | Lever | Lever | Lever |
| Springs | ½ elliptic | F., el.; r., ½ el. | Elliptic | ¾ elliptic | ¾ elliptic |
| Wheels | Wire | Wire or wood | Wood | Wood | Wood |
| Wheelbase | 100 in. | 100 in. | 102 in. | 86 in. | 100 in. |

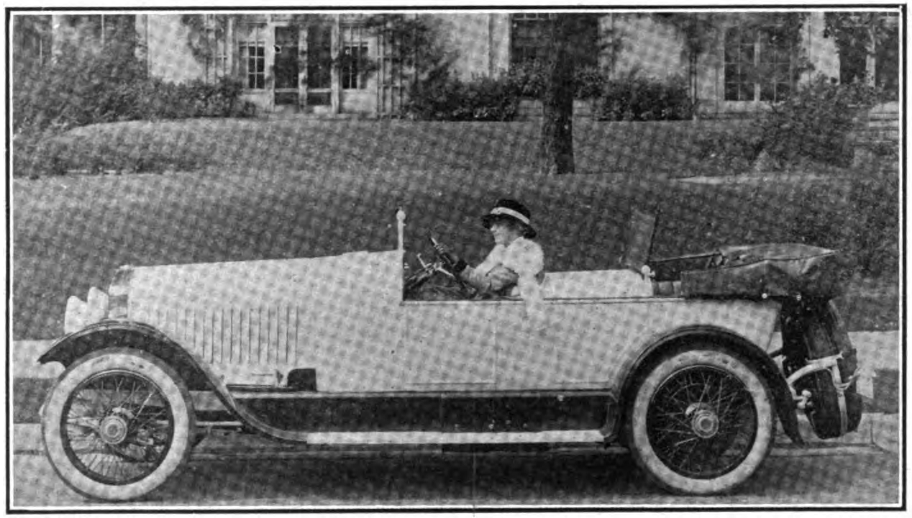
| Name of Car | Milburn | Ohio Electric | Ohio | Rauch & Lang | Rauch & Lang |
|---|---|---|---|---|---|
| No. or Name of Model | 27 | 44 | 63 | Coach, Model J | Bgh. Model BX |
| Price | $1885 | $2680 | $3250 | $3200 | $3000 |
| Miles Per Charge | 85 | 75-100 | 75-100 | 70-100 | 80-100 |
| Maximum Speed | 23 | 28 | 26 | 26 | 26 |
| Motor Type | Series | Series | Series | Compound | Compound |
| Battery | Philadelphia | Optional | Optional | Exide | Exide or Phil. |
| Controller Type | Magnetic | Magnetic | Magnetic | Flat | Flat, own |
| Speeds Forward | Four | Five | Five | Six | Six |
| Drive to Rear Wheels | Worm | Helical bevel | Helical bevel | Worm | Worm gear |
| Rear Axle Type | ¾ floating | Full floating | Full floating | Full floating | Full floating |
| Tires, Rear | 32x3½ | 33x4½ | 34x4½ | 33x4½ | 33x4½ |
| Steer, Control | Lever | Lever | Lever | Lever | Lever |
| Springs | ...... | ¾ elliptic | ¾ elliptic | ⅞ elliptic | ⅞ elliptic |
| Wheels | Wood or wire | Optional | Optional | Optional | Optional |
| Wheelbase | 105 in. | 103 in. | 103 in. | 102 in. | 92 in. |



Above, Paige 6-39; Below, Studebaker Big Six.

# SPECIFICATIONS OF THE 1918 MAKES OF STEAM CARS.

| | |
|---|---|
| Name of Car | Doble-Detroit |
| Model | D |
| Price | $3750 |
| Wheelbase | 135 |
| Type of Boiler | Water |
| Boiler Location | Under hood |
| Type of Engine | Simple |
| Action of Engine | Double acting |
| Type of Valve Gear | Doble |
| Type of Valves | Slide |
| No. of Cylinders | Two |
| Bore and Stroke | 5x4 |
| Location of Engine | Rear axle |
| Final Drive | Spur gear |
| Fuel Used | Kerosene |
| Fuel Control | Automatic |
| Fuel Feed | Pressure |
| Burner Type | Atomizing |
| Burner Action | Condensing |
| Feed Water Control | Automatic |
| Rear Axle Ratio | 42 to 54 |
| Car Drives Through | Springs |
| Torque Taken by | Engine |
| Rear Axle Bearings | Ball |
| Front Wheel Bearings | Ball |
| Wheels (Wire or Wood) | Wood |
| Rims | Firestone |
| Tires (Size) | 35x5 |
| Electrical Equipment | Wagner |



Doble Steam Car, 1918 Model.

| | |
|---|---|
| Name of Car | Stanley |
| Model | 735-736 |
| Price | $2600-$2550 |
| Wheelbase | 130 in. |
| Type of Boiler | Fire tube |
| Boiler Location | Under hood |
| Type of Engine | Simple |
| Action of Engine | Double |
| Type of Valve Gear | Stephen.-Link. |
| Type of Valves | Slide |
| No. of Cylinders | Two |
| Bore and Stroke | 4x5 |
| Location of Engine | Rear axle |
| Final Drive | Spur gear |
| Fuel Used | Kerosene |
| Fuel Control | Automatic |
| Fuel Feed | Pressure |
| Burner Type | Drill |
| Burner Action | Vaporizing |
| Feed Water Control | Automatic |
| Rear Axle Ratio | 40 to 60 |
| Car Drives Through | ...... |
| Torque Taken by | Engine frame |
| Rear Axle Bearings | B. & R. |
| Front Wheel Bearings | Roller |
| Wheels | Wood |
| Rims | ...... |
| Tires | 35x4½ |
| Electrical Equipment | Apple |

# *Index of 1918 Cars, Body Styles and Prices*

## Gasoline Passenger Cars Listed Alphabetically According to Manufacturers' Names, with Index to Chassis Specifications

### A

**Abbott Corp., Cleveland, O.**

ABBOTT-DETROIT CHASSIS, Pg. 34

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| 6-44 | Touring | 6 | 7 | $1295 |
| 6-60 | Touring | 6 | 7 | 1595 |

**The Allen Motor Co., Fostoria, O.**

ALLEN CHASSIS, Pg. 30-37

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| 41 | Touring | 4 | 5 | $1095 |
| 41 | Roadster | 4 | 4 | 1095 |
| 41 | Sedan | 4 | 5 | 1395 |

**American Motors Corp., Plainfield, N. J.**

AMERICAN-SIX CHASSIS, Pg. 31-34

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| B | Touring | 6 | 5 | $1375 |
| B | Cloverleaf | 6 | 4 | 1465 |
| B | Speedster | 6 | 2 | 1465 |

**Anderson Motor Co., Rock Hill, S. C.**

ANDERSON 6-40 CHASSIS, Pg. 34

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| 6-40 | Touring | 6 | 6 | $1435 |

**Apperson Brothers Auto Co., Kokomo, Ind.**

APPERSON Chassis, Pg. 37-39

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| 8-18-7 | Touring | 8 | 7 | $2550 |
| 8-18-4 | Roadster | 8 | 4 | 2550 |
| 8-18-7 | Touring | 8 | 7 | 3200 |
| 8-18-7 | Touring | 8 | 7 | 3400 |

**Auburn Automobile Co., Auburn, Ind.**

AUBURN CHASSIS, Pg. 30-34

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| 6-39-B | Touring | 6 | 5 | $1345 |
| 6-39-B | Convertible Sedan | 6 | 5 | 1545 |
| 6-39-E | Chummy Roadster | 6 | 4 | 1345 |
| 6-39-E | Chummy Coupe | 6 | 4 | 1495 |
| 6-39-S | Sport | 6 | 4 | 1395 |
| 6-44 | Touring | 6 | 7 | 1685 |
| 6-44 | Convertible Sedan | 6 | 7 | 1985 |
| 6-44 | Sedan | 6 | 7 | 2450 |

**Austin Automobile Co., G. Rapids, Mich.**

AUSTIN CHASSIS, Pg. 34-40

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| 36-66 | Touring | 6 | 5-6 | $3400 |
| 36-66 | Roadster | 6 | 2-4 | 3400 |
| 48-66 | Touring | 6 | 5-6 | 4200 |
| 48-66 | Roadster | 6 | 2-4 | 4200 |
| 1918 | Touring | 12 | 5-6 | 3750 |
| 1918 | Roadster | 12 | 2-4 | 2750 |
| 1918 | Coupe | 12 | 5 | 4550 |
| 1918 | Sedan | 12 | 7 | 4950 |
| 1918 | Limousine | 12 | 7 | 5250 |

### B

**Baker R. & L. Co., Cleveland, O.**

OWEN-MAGNETIC CHASSIS, Pg. 37

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| O-36-5 | Touring | 6 | 4 | $3750 |
| O-36-4 | Touring | 6 | 7 | 3750 |
| O-36-6 | Roadster | 6 | 4 | 3750 |
| O-36-3 | Limousine | 6 | 5 | 4800 |
| O-36-7 | Landaulet | 6 | 5 | 5000 |
| M-25-1 | Coupe | 6 | 3 | 3500 |
| M-25-3 | Limousine | 6 | 7 | 4200 |
| M-25-4 | Touring | 6 | 5 | 3150 |
| M-25-7 | Landaulet | 6 | 7 | 4400 |
| W-42-4 | Touring | 6 | 7 | 5300 |
| W-42-3 | Limousine | 6 | 7 | 6300 |
| W-42-2 | Sedan | 6 | 7 | 6200 |

**Barley Motor Car Co., Kalamazoo, Mich.**

ROAMER CHASSIS, Pg. 8

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| 6-90 | Touring | 6 | 6 | $3150 |
| 6-54 | Touring | 6 | 4 | 2095 |
| 6-54 | Roadster | 6 | 2-4 | 2295 |
| 6-54 | Town Car | 6 | .. | 3250 |
| 6-54 | Sedan | 6 | .. | 3250 |
| 6-54 | Touring Sedan | 6 | .. | 2250 |
| 6-45 | Touring | 6 | 4 | 1950 |
| 6-45 | Roadster | 6 | 2-4 | 2150 |
| 6-45 | Town Car | 6 | .. | 3150 |
| 6-45 | Standard Sedan | 6 | .. | 3150 |
| 6-45 | Touring Car | 6 | .. | 3150 |

**Bartholomew Co., Peoria, Ill.**

GLIDE CHASSIS, Pg. 35

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| 6-40 | Tourist | 6 | 5 | $1495 |
| 6-40 | Convertible Sedan | 6 | 5 | 1795 |
| 6-40 | Roadster | 6 | 4 | 1495 |

**Bell Motor Car Co., York, Pa.**

BELL CHASSIS, Pg. 30

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| 18 | Touring | 4 | 5 | $995 |
| Special | Touring | 4 | 5 | 1145 |

**Biddle Motor Car Co., Philadelphia, Pa.**

BIDDLE CHASSIS, Pg. 30

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| H | Touring | 4 | 4 | $2650 |

**Birch Motor Cars, Chicago, Ill.**

BIRCH CHASSIS, Pg. 30-34

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| Super Four | Touring | 4 | 5 | $895 |
| Super-Four | Chummy Road. | 4 | 4 | 895 |
| Light Six | Touring | 6 | 5 | 1055 |

**Brewster & Co., Queensboro B. P., L. I. C.**

BREWSTER CHASSIS, Pg. 30

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| 1 | Chassis | 4 | .. | $5500 |
| 1 | Brewster Town Bghm. | 4 | 2 | 8300 |
| 1 | Brewster Coun. Bghm. | 4 | 4 | 8300 |
| 1 | Brewster G. Q. Bghm. | 4 | 4 | 8300 |
| 1 | Brewster S. T. Land. | 4 | 4 | 8400 |
| 1 | Brewster L. T. Land. | 4 | 4 | 8500 |
| 1 | Brewster Tour. Land. | 4 | 4 | 8800 |
| 1 | Brewster Limousine | 4 | 4 | 8500 |
| 1 | Brewster En. Drive | 4 | 6 | 8400 |
| 1 | Brewster Touring | 4 | 4 | 7700 |
| 1 | Brewster Runabout | 4 | 2-4 | 7200 |

**Briscoe Motor Corp., Jackson, Mich.**

BRISCOE CHASSIS, Pg. 30

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| Four-B24 | Touring | 4 | 5 | $725 |
| Four-B24 | Roadster | 4 | 4 | 725 |
| Four-B24 | Runabout | 4 | 2 | 725 |

**Buick Motor Co., Flint, Mich.**

BUICK CHASSIS, Pg. 34

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| E-24 | Touring | 4 | 5 | $880 |
| E-45 | Touring | 6 | 5 | 1361 |
| E-49 | Touring | 6 | 7 | 1608 |
| E-50 | Sedan | 6 | 7 | 2304 |

### C

**Cadillac Motor Car Co., Detroit, Mich.**

CADILLAC CHASSIS, Pg. 35-39

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| 57 | Touring | 8 | 7 | $2805 |
| 57 | Phaeton | 8 | 4 | 2805 |
| 57 | Roadster, convertible | 8 | 2 | 2805 |
| 57 | Victoria, convertible | 8 | 4 | 3205 |
| 57 | Brougham | 8 | 5 | 3650 |
| 57 | Town Limousine | 8 | 7 | 4160 |
| 57 | Town Landaulet | 8 | 7 | 4310 |
| 57 | Limousine | 8 | 7 | 4145 |
| 57 | Imperial | 8 | 7 | 4345 |
| 57 | Landaulet | 8 | 7 | 4295 |

**Campbell Motor Car Co., Kingston, N. Y.**

CAMPBELL CHASSIS, Pg. 30

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| ...... | Touring | 4 | 5 | $835 |

**J. I. Case T. M. Co., Racine, Wis.**

CASE CHASSIS, Pg. 33-34

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| U | Springfield Sedan | 6 | 7 | $2375 |
| U | Touring | 6 | 7 | 1875 |
| U | Roadster | 6 | 4 | 1875 |

**Chalmers Motor Co., Detroit, Mich.**

CHALMERS CHASSIS, Pg. 34-40

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| Six-30 | Touring | 6 | 5 | $1365 |
| Six-30 | Touring | 6 | 7 | 1450 |
| Six-20 | Duplex | 6 | 4 | 1475 |
| Six-30 | Roadster | 6 | 2-3 | 1365 |
| Six-30 | Speedster | 6 | 2 | 2500 |
| Six-30 | Town Car | 6 | 7 | 2925 |
| Six-30 | Limousine | 6 | 7 | 2925 |
| Six-30 | Limousine Land. | 6 | 7 | 3025 |
| Six-30 | Town Landaulet | 6 | 7 | 3025 |
| Six-30 | Touring Sedan | 6 | 6 | 1850 |
| Six-30 | Cabriolet | 6 | 3 | 1625 |

**Chandler Motor Car Co., Cleveland, O.**

CHANDLER CHASSIS, Pg. 34

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| 18 | Touring | 6 | 7 | $1595 |
| 18 | Speedster | 6 | 4 | 1675 |

**Chevrolet Motor Co., New York City.**

CHEVROLET CHASSIS, Pg. 30-31-39

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| Four-Ninety | Touring | 4 | 5 | $635 |
| Four-Ninety | Roadster | 4 | 2 | 620 |
| Four-Ninety | Sedan or Coupe | 4 | 5-2 | 1060 |
| F A | Touring | 4 | 5 | 935 |
| F A | Roadster | 4 | 2 | 935 |
| F A | Sedan | 4 | 5 | 1475 |
| Eight Cyl. | Touring | 8 | 5 | 1385 |
| Eight Cly. | Roadster | 8 | 4 | 1385 |

**Cole Motor Car Co., Indianapolis, Ind.**

COLE EIGHT CHASSIS, Pg. 39

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| 860 | Touring | 8 | 7 | $1995 |
| 861 | Tuxedo Foursome | 8 | 4 | 1995 |
| 863 | Tourcoupe | 8 | 4 | 2495 |
| 864 | 4-Door Toursedan | 8 | 7 | 2695 |
| 865 | 4-Door Toursedan | 8 | 7 | 2595 |
| 866 | 4-Door Toursedan | 8 | 8 | 2795 |
| 870 | Tourster | 8 | 7 | 2395 |
| 871 | Roadster | 8 | 2 | 2395 |
| 872 | Sporster | 8 | 4 | 2395 |

**Columbia Motors Co., Detroit, Mich.**

COLUMBIA SIX CHASSIS, Pg. 34

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| A | Touring | 6 | 5 | $1350 |
| B | Sport model | 6 | 4 | 1495 |

**Comet Automobile Co., Decatur, Ill.**

COMET CHASSIS, Pg. 35

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| Centennial | Touring | 6 | 5 | $1285 |

**Commonwealth Motors Co., Chicago, Ill.**

COM'WEALTH U.-4-F. CHASSIS, Pg. 30

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| "Ultra-4-Forty" | Touring | 4 | 5 | $995 |
| "Ultra-4-Forty" | Chum. Rd. | 4 | 4 | 995 |

**Cortland Cart & Car. Co., Sidney, N. Y.**

HATFIELD CHASSIS, Pg. 31

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| A | Touring | 4 | 5 | $1080* |
| H | Roadster | 4 | 2 | 950 |
| C | Roadster | 4 | 4 | 1090 |
| C | Roadster De Luxe | 4 | 4 | 1290 |
| B | Speedster | 4 | 2 | 950 |
| I | Suburban | 4 | 5 | 875 |

*Includes War Tax.

**Crawford Auto. Co., Hagerstown, Md.**

CRAWFORD CHASSIS, Pg. 35

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| 18-6-40 | Touring | 6 | .. | $2250 |

**Crow-Elkhart Motor Car Co.. Elkhart. Ind.**

CROW-ELKHART CHASSIS, Pg. 30

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| C. E. | Touring | 4 | 5 | $935 |
| C. E. | Touring de luxe | 4 | 5 | 995 |
| C. E. | Convertible sedan | 4 | .. | 1275 |
| C. E. | Cloverleaf | 4 | 4 | 995 |

**J. Cunningham Son & Co., Rochester, N. Y.**

CUNNINGHAM CHASSIS, Pg. 39

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| V | Touring | 8 | 7 | $4250 |
| V | Closed | 8 | .. | 5500 |
| V | Limousine | 8 | .. | 5500 |
| V | Town Car | 8 | .. | 5500 |
| V | Touring | 8 | 6 | 4750 |
| V | Roadster | 8 | 4 | 4750 |
| V | Inside Drive Limousine | 8 | 6 | 6000 |
| V | Cabriolet | 8 | 6 | 6000 |
| V | Town Car | 8 | 6 | 6000 |

### D

**Daniels Motor Car Co., Reading, Pa.**

DANIELS CHASSIS, Pg. 39

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| B | Touring | 8 | 7 | $3100 |
| B | Roadster | 8 | 2-3-4 | 3100 |
| B | Cloverleaf | 8 | 4 | 3100 |

**G. W. Davis Motor Car Co., Richmond, Ind.**

DAVIS CHASSIS, Pg. 35

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| 6-H | Touring | 6 | 7 | $1485 |
| 6-I | Roadster | 6 | 5 | 1485 |
| 6-J | Touring | 6 | 7 | 1785 |

**Dispatch Motor Car Co., Minneapolis, Minn.**

DISPATCH CHASSIS, Pg. 30

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| D | Roadster | 4 | 2 | $1150 |
| E | Roadster | 4 | 4 | 1250 |

| | | | | |
|---|---|---|---|---|
| F | Sedan | 4 | 5 | 1400 |
| G | Touring | 4 | 7 | 1250 |
| H | Coupe | 4 | 3 | 1400 |

**Dixie Motor Car Co., Louisville, Ky.**

DIXIE FLYER CHASSIS, Pg. 30

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| L. S. 35 | Touring | 4 | 5 | $995 |
| L. S. 35 | Roadster | 4 | 4 | 995 |
| L. S. 35 | Convertible sedan | 4 | 5 | 1375 |

**Dodge Brothers, Detroit, Mich.**

DODGE BROS. M. CAR CHASSIS, Pg. 30

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| ...... | Touring | 4 | 5 | $885 |
| ...... | Winter Touring | 4 | 5 | 1050 |
| ...... | Roadster | 4 | 2 | 885 |
| ...... | Winter Roadster | 4 | 2 | 1050 |
| ...... | Sedan | 4 | 5 | 1350 |
| ...... | Coupe | 4 | 2 | 1350 |

**Dorris Motor Car Co., St. Louis, Mo.**

DORRIS CHASSIS, Pg. 25

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| I C 6 | Touring | 6 | 7 | .... |
| I C 6 | Roadster | 6 | 4 | .... |
| I C 6 | Sedan | 6 | 5 | .... |
| I C 6 | Coupe | 6 | 4 | .... |
| I C 6 | Limousine | 6 | 7 | .... |

**Dort Motor Car Co., Flint, Mich.**

DORT CHASSIS, Pg. 31

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| 11 | Touring | 4 | 5 | .... |
| 11 S | Sedan | 4 | 5 | .... |
| 11 T | Sedanet | 4 | 5 | .... |
| B-C | Coupe | 4 | 3 | .... |
| B | Roadster | 4 | 3 | .... |

**Douglas Motors Corp., Omaha, Neb.**

DOUGLAS EIGHT CHASSIS, Pg. 39

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| G 5 | Touring | 8 | 5 | $2000 |
| G 7 | Touring | 8 | 7 | 2100 |
| G 4 | Club Roadster | 8 | 4 | 2000 |
| G 3 | Standard Roadster | 8 | 3 | 2000 |

### E

**Economy Motor Car Co., Tiffin, O.**

ECONOMY CHASSIS, Pg. 30-39

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| 4-36 | Touring | 4 | 5 | $1040 |
| 8-48 | Touring | 8 | 7 | 1395 |

**Elgin Motor Car Corp., Chicago, Ill.**

ELGIN SIX CHASSIS, Pg. 35

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| F | Touring | 6 | 5 | $1095 |
| F | Roadster | 6 | 4 | 1095 |
| F | Sedan | 6 | 5 | 1645 |

**Elkhart Car. & Motor Car Co., Elkhart, Ind.**

ELCAR CHASSIS, Pg. 31-35-36

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| D-Four | Touring | 4 | 5 | $1095 |
| E-Four | Roadster | 4 | 4 | 1095 |
| G-Four | Sedan | 4 | 5 | 1625 |
| D-Six | Touring | 6 | 5 | 1295 |
| E-Six | Roadster | 6 | 4 | 1295 |
| G-Six | Sedan | 6 | 5 | 1795 |

**Empire Auto Co., Indianapolis, Ind.**

EMPIRE CHASSIS, Pg. 31-35-40

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| 50 | Touring | 4 | 5 | $1125 |
| 51 | Roadster (wire wheels) | 4 | 2 | 1165 |
| 70A | Touring | 6 | 5 | 1345 |
| 70A | Touring | 6 | 7 | 1275 |
| 70S | Sedan | 6 | 5 | 1685 |
| 73 | Roadster | 6 | 4 | 1360 |

**Erie Motor Co., Painesville, O.**

ERIE CHASSIS, Pg. 31

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| 33 | Touring | 4 | 5 | $975 |
| 34 | Roadster | 4 | 2 | 975 |

### F

**Fageol Motors Co., Oakland, Cal.**

FAGEOL CHASSIS, Pg. 35

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| 100 | Chassis | 6 | .. | $10,000 |

**F. I. A. T., Poughkeepsie, N. Y.**

FIAT CHASSIS, Pg. 31

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| 55-E | Touring | 4 | 7 | .... |
| 55-E | Limousine | 4 | 7 | .... |

**Ford Motor Co., Detroit, Mich.**

FORD CHASSIS, Pg. 31

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| Model T | Chassis | 4 | .. | $325 |
| Model T | Runabout | 4 | 2 | 345 |
| Model T | Touring | 4 | 5 | 360 |
| Model T | Coupe | 4 | 2 | 560 |
| Model T | Town car | 4 | 6 | 645 |
| Model T | Sedan | 4 | 5 | 695 |
| Model T | Truck Chassis | 4 | .. | 600 |

**H. H. Franklin Mfg. Co., Syracuse, N. Y.**

FRANKLIN CHASSIS, Pg. 35

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| Series 9 | Touring | 6 | 5 | $2050 |
| Series 9 | Roadster | 6 | 4 | 2050 |
| Series 9 | Runabout | 6 | 2 | 2000 |
| Series 9 | Cabriolet | 6 | 3-1 | 2850 |
| Series 9 | Brougham | 6 | 4 | 2900 |
| Series 9 | Sedan | 6 | 5 | 2950 |
| Series 9 | Town Car | 6 | 7 | 3200 |
| Series 9 | Limousine | 6 | 7 | 2200 |

### G

**Geronimo Motor Co., Enid, Okla.**

GERONIMO CHASSIS, Pg. 35

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| 6 A 45 | Touring | 6 | 5 | $1395 |
| 6 A 45 | Touring | 6 | 7 | 1450 |
| 6 A 45 | Roadster | 6 | 4 | 1450 |
| 6 A 45 | Roadster | 6 | 2 | 1395 |

**Ghent Motor Co., Ottawa, Ill.**

GHENT CHASSIS, Pg. 35

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| 6-60 | Touring | 6 | 5 | $2160 |
| 6-60 | Roadster | 6 | 4 | 2160 |
| 6-60 | Sedan | 6 | 5 | 2750 |

**Grant Motor Car Corp., Cleveland, O.**

GRANT CHASSIS, Pg. 34-35

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| G | Touring | 6 | 5 | $1055 |
| G | Roadster | 6 | 3 | 1055 |
| G | Detachable Sedan | 6 | 5 | 1350 |
| G | All-Weather Sedan | 6 | 5 | 1595 |
| G | All-Weather Coupe | 6 | 3 | 1575 |

### H

**Hackett Motor Car Co., Jackson, Mich.**

HACKETT CHASSIS, Pg. 21

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| ...... | Touring | 4 | 5 | $960 |
| ...... | Roadster | 4 | 4 | .... |

**Hal Motor Car Co., Cleveland, O.**

HAL-TWELVE CHASSIS, Pg. 40

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| 25 | Roadster | 12 | 3 | $3500 |
| 25 | Tour-roadster | 12 | 4 | 3750 |
| 25 | Touring | 12 | 7 | 3500 |
| 25 | Sedan | 12 | 7 | 4500 |
| 25 | Limousine | 12 | 7 | 5000 |
| 25 | Brougham | 12 | 7 | 5000 |

**Harroun Motors Corp., Detroit, Mich.**

HARROUN CHASSIS, Pg. 31

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| AA-1 | Touring | 4 | 5 | $785 |

**Harvard-Pioneer Motor Car Co., Troy, N. Y.**

HARVARD CHASSIS, Pg. 31

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| 4-25 | Roadster | 4 | 2 | $750 |
| 4-25 | Cloverleaf | 4 | 4 | 985 |

**Haynes Automobile Co., Kokomo, Ind.**

HAYNES CHASSIS, Pg. 35-40

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| 38 | Touring | 6 | 5 | $1725 |
| 39 | Touring | 6 | 7 | 1825 |
| 39 | Fourdore Roadster | 6 | 4 | 1825 |
| 39 | Sedan | 6 | 7 | 2585 |
| 39 | Coupe | 6 | 4 | 2535 |
| 39 | Town car | 6 | 5 | 3250 |
| 44 | Touring | 12 | 7 | 2785 |
| 44 | Fourdore Roadster | 12 | 4 | 2785 |
| 44 | Sedan | 12 | 7 | 3385 |
| 44 | Coupe | 12 | 4 | 3335 |
| 44 | Town car | 12 | 5 | 3985 |

**Hudson Motor Car Co., Detroit, Mich.**

HUDSON CHASSIS, Pg. 36

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| Super-Six | Phaeton | 6 | 7 | $1950 |
| Super-Six | Phaeton | 6 | 4 | 2050 |
| Super-Six | Runabout Land. | 6 | 2 | 2350 |
| Super-Six | Foredoor Sedan | 6 | 7 | 2350 |
| Super-Six | Tour. Limousine | 6 | 7 | 2750 |
| Super-Six | Limousine | 6 | 7 | 3400 |
| Super-Six | Lim. Landau | 6 | 7 | 3500 |
| Super-Six | Town car | 6 | 7 | 3400 |
| Super-Six | Town Car Landau | 6 | 7 | 3500 |
| Super-Six | Full Fold. Landau | 6 | 7 | 4250 |

**Hupp Motor Car Co., Detroit, Mich.**

HUPMOBILE CHASSIS, Pg. 30-31

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| R | Touring | 4 | 5 | $1250 |
| ...... | Touring | 4 | 7 | 1385 |

### I

**Inter-State Motor Co., Muncie, Ind.**

INTER-STATE CHASSIS, Pg. 31

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| T | Touring | 4 | 5 | $1000 |
| TR | Roadster | 4 | 2 | 950 |
| TR4 | Roadster | 4 | 4 | 1025 |

### J

**Jackson Automobile Co., Jackson, Mich.**

JACKSON CHASSIS, Pg. 38-39

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| 249 | Roadster | 8 | 2 | $1495 |
| 349 | Chummy Roadster | 8 | 4 | 1495 |
| 349 | Touring | 8 | 5 | 1495 |
| 349 | Touring | 8 | 7 | 1570 |
| 349 | Flyer | 8 | 4 | 1575 |
| 349 | Springfield Sedan | 8 | 7 | 2195 |

**Jones Motor Car Co., Wichita, Kan.**

JONES CHASSIS, Pg. 36

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| 26B | Touring | 6 | 7 | $1675 |

**Jordan Motor Car Co., Cleveland, O.**

JORDAN CHASSIS, Pg. 36

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| 1918 | Touring | 6 | 7 | $1995 |
| 1918 | Sport Model | 6 | 4 | 1995 |
| 1918 | Sedan | 6 | 7 | 2750 |
| 1918 | Brougham | 6 | 4 | 3000 |
| 1918 | Town car | 6 | 6 | 3300 |
| 1918 | Sport Limousine | 6 | 7 | 3500 |
| 1918 | Sport Marine | 6 | 4 | 2375 |

### K

**King Motor Car Co., Detroit, Mich.**

KING CHASSIS,Pg. 40

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| EE | Touring | 8 | 7 | .... |
| EE | Sedan | 8 | 7 | .... |
| EE | Roadster | 8 | 3 | .... |
| EE | Foursome | 8 | 4 | .... |

**Kissel Motor Car Co., Hartford, Wis.**

KISSELKAR CHASSIS, Pg. 32-36-40

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| 100 point 6 | Touring | 6 | 5 | $1295 |
| 100 point 6 | Touring | 6 | 5 | 1385 |
| 100 Point 6 | Sedan | 6 | 5 | 1735 |
| 100 point 6 | Roadster | 6 | 3 | 1295 |
| 100 point 6 | Roadster | 6 | 4 | 1385 |
| 100 point 6 | Coupe | 6 | 4 | 1735 |
| 100 point 6 | Victoria | 6 | 5 | 2050 |
| 100 point 6 | Sedanlet | 6 | 4 | 1885 |
| 100 point 6 | Sedanlet | 6 | 4 | 1485 |
| 100 point 6 | Sedan | 6 | 5 | 1885 |
| Double 6 | Touring | 12 | 7 | 2250 |
| Double 6 | Sedan | 12 | 7 | 2650 |
| Double 6 | Coupe | 12 | 4 | 2650 |
| Double 6 | Roadster | 12 | 4 | 2250 |
| Double 6 | Sedan | 12 | 4 | 2800 |
| Double 6 | Sedanlet | 12 | 4 | 2350 |

**Kline Car Corporation, Richmond, Va.**

KLINE KAR CHASSIS, Pg. 36

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| 6-38 G. A. | Touring | 6 | 5 | $1495 |
| 6-38 G. A. | Shamrock | 6 | 4 | 1495 |
| 6-38 G. A. | Sport | 6 | 4 | 1495 |
| 6-38 G. A. | Runabout | 6 | 2-3 | 1495 |

### L

**Laurel Motor Car Co., Richmond, Ind.**

LAUREL CHASSIS, Pg. 31

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| 55 | Roadster | 4 | 4 | $1095 |
| 55 | Touring | 4 | 5 | 1095 |

**Lenox Motor Car Co., Boston, Mass.**

LENOX CHASSIS, Pg. 36

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| 18 | Touring | 6 | 5 | $2650 |

**The Lexington-Howard Co., Connersville, Ind.**

LEXINGTON CHASSIS, Pg. 36

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| 6-O | Clubster | 6 | 4 | $1385 |
| 6-O | Coupe | 6 | 4 | 1545 |
| 6-R | Touring | 6 | 5 | 1585 |

**Lewis Spring & Axle Co., Chelsea, Mich.**

HOLLIER CHASSIS, Pg. 36-39

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| 206 | Touring | 6 | 5 | .... |
| 188 | Touring | 8 | 5 | $1285 |

**Liberty Motor Car Co., Detroit, Mich.**

LIBERTY CHASSIS, Pg. 36

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| 10-B | Touring | 6 | 5 | $1350 |
| 10-B | Roadster | 6 | 4 | 1350 |
| 10-B | Roadster | 6 | 2 | 1350 |
| 10-B | Sedan | 6 | 5 | 1925 |
| 10-B | Brougham | 6 | 6 | 2700 |
| 10-B | Landaulet | 6 | 6 | 2700 |

**The Locomobile Co. of America, Bridgeport, Conn.**

LOCOMOBILE CHASSIS, Pg. 36

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| 38 Series 2 | Touring | 6 | 6 | $5000 |
| 38 Series 2 | Touring | 6 | 7 | 5000 |
| 38 Series 2 | Touring | 6 | 4 | 5150 |
| 38 Series 2 | Limousine | 6 | .. | 6200 |
| 38 Series 2 | Landaulet | 6 | .. | 6300 |
| 38 Series 2 | Berline | 6 | .. | 6400 |

| | | | | |
|---|---|---|---|---|
| 38 Series 2 | Chassis | 6 | .. | 4350 |
| 48 Series 2 | Touring | 6 | 6 | 5950 |
| 48 Series 2 | Touring | 6 | 7 | 5950 |
| 48 Series 2 | Touring | 6 | 4 | 6050 |
| 48 Series 2 | Limousine | 6 | 7 | 7200 |
| 48 Series 2 | Landaulet | 6 | 7 | 7300 |
| 48 Series 2 | Chassis | 6 | .. | 5100 |
| 48 Series 2 | Berline | 6 | 7 | 7400 |

All Prices Plus 3% War Tax.

**Luverne Automobile Co., Luverne, Minn.**

LUVERNE CHASSIS, Pg. 36

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| 760 | Touring | 6 | 7 | $1650 |
| 260 | Roadster | 6 | 2 | 1650 |

### Mc

**McFarlan Motor Co., Connersville, Ind.**

MCFARLAN SIX CHASSIS, Pg. 36

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| 122 | Roadster | 6 | 2 | $3500 |
| 122 | Roadster | 6 | 4 | 3500 |
| 124 | Destroyer design | 6 | 4 | 3750 |
| 125 | Sport model | 6 | 5 | 3700 |
| 126 | Touring | 6 | 6 | 3500 |
| 127 | Touring | 6 | 7 | 3500 |
| 131 | Town car | 6 | 6 | 4600 |
| 134 | Knickerbocker Cab. | 6 | 7 | 5250 |
| 136 | Sloping V Front Sedan | 6 | 7 | 4600 |
| 136 | Slop. Straight F. Sedan | 6 | 7 | 4600 |
| 137 | Philadelphia Berline | 6 | 7 | 4900 |
| 138 | Limousine | 6 | 7 | 4650 |
| 141 | Continental Landaulet | 6 | 7 | 4900 |

### M

**The Madison Motors Co., Anderson, Ind.**

MADISON CHASSIS, Pg. 36

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| 7 | Touring | 6 | 7 | $1485 |

**Maibohm Motors Co., Racine, Wis.**

MAIBOHM CHASSIS, Pg. 36-39

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| A | All-Year Roadster | 4 | 3 | $865 |
| A | Coupe | 4 | 3 | 1095 |
| B | Sport Touring | 6 | 4 | 975 |
| B | Touring | 6 | 5 | 975 |
| B | Roadster | 6 | 3 | 975 |
| B | Coupe | 6 | 2 | 1375 |
| B | Sedan | 6 | 5 | 1375 |

**Maxwell Motor Co., Detroit, Mich.**

MAXWELL CHASSIS, Pg. 32

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| 25 | Touring | 4 | 5 | $745 |
| 25 | Roadster | 4 | 3 | 745 |
| 25 | Coupe | 4 | 3 | 1095 |
| 25 | Sedan | 4 | 5 | 1095 |
| 25 | Town car | 4 | 6 | 1095 |

**Mercer Automobile Co., Trenton, N. J.**

MERCER CHASSIS, Pg. 32-38

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| 22-73 | Touring | 4 | 6 | $3500 |
| 22-73 | Raceabout | 4 | 6 | 3250 |
| 22-73 | Sporting | 4 | 6 | 3500 |
| 22-73 | Runabout | 4 | 6 | 3400 |

**Metz Co., Waltham, Mass.**

METZ CHASSIS, Pg. 32

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| 25 | Touring | 4 | 5 | $695 |
| 25 | Roadster | 4 | 2 | 695 |
| 25 | Open Delivery | 4 | 2 | 550 |
| 25 | T. and S. Curtain Del. | 4 | 2 | 600 |
| 25 | Panel Delivery | 4 | 2 | 695 |

**Mitchell Motors Co., Racine, Wis.**

MITCHELL CHASSIS, Pg. 32-37

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| D 2-40 | Roadster | 6 | 2 | $1250 |
| D-5-40 | Touring | 6 | 5 | 1250 |
| D-4-40 | Club Roadster | 6 | 5 | 1280 |
| D-40 | Coupe | 6 | 3 | 1850 |
| D-40 | Sedan | 6 | 5 | 1950 |
| D-5-40 | Demountable | 6 | 5 | 1550 |
| C-2-42 | Roadster | 6 | 3 | 1490 |
| C-4-42 | Club Roadster | 6 | 5 | 1560 |
| C-5-42 | Touring | 6 | 5 | 1510 |
| C-7-42 | Touring | 6 | 7 | 1525 |
| C-42 | Sedan | 6 | 7 | 2275 |
| C-42 | Club Sedan | 6 | 5 | 2185 |
| C-42 | Cabriolet | 6 | 4 | 1960 |
| C-42 | Coupe | 6 | 4 | 2135 |
| C-42 | Limousine | 6 | 7 | 2850 |
| C-42 | Town car | 6 | 7 | 2850 |
| C-42 | De Luxe Sedan | 6 | 7 | 2425 |
| C-42 | Demountable | 6 | 7 | 1825 |

**Moline Automobile Co., East Moline, Ill.**

MOLINE-KNIGHT CHASSIS, Pg. 32

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| C | Roadster | 4 | 4 | $1650 |
| C | Touring | 4 | 5 | 1650 |
| G | Roadster | 4 | 4 | 1985 |
| G | Touring | 4 | 7 | 1985 |
| G DeLuxe | Touring | 4 | 7 | 2250 |
| L | Sedan | 4 | 5 | 2280 |

**Monitor Motor Car Co., Columbus, O.**

MONITOR CHASSIS, Pg. 32

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| C & R | Touring | 4 | 5 | $995 |
| C & R | Roadster | 4 | 3-4 | 995 |
| M | Touring | 6 | 5 | 1195 |
| O | Roadster | 6 | 4 | 1195 |
| O | Roadster | 6 | 3 | 1195 |

**Monroe Motor Co., Pontiac, Mich.**

MONROE CHASSIS, Pg. 32

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| M-3 | Club | 4 | 3 | $635 |
| M-3 | Sedan | 4 | 4 | 965 |
| M-6 | Touring | 4 | 5 | 1095 |

**Moon Motor Car Co., St. Louis, Mo.**

MOON CHASSIS, Pg. 36-37

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| 36 | Touring | 6 | 5 | $1195 |
| 45 | Touring-Roadster | 6 | 7-4 | 1685 |
| 45 | Cabriolet | 6 | 3 | 2250 |
| 45 | Cabriolet | 6 | 7 | 2350 |
| 66 | Touring | 6 | 7 | 1850 |
| 66 | Roadster | 6 | 4 | 1850 |
| 66 | Sedan | 6 | 7 | 2450 |
| 66 | Coupe | 6 | 4 | 2350 |
| 66 | Cabriolet | 6 | 3 | 2350 |

**Moore Motor Co., Minneapolis, Minn.**

MOORE-30 CHASSIS, Pg. 32

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| E-30 | Touring | 4 | 5 | $695 |

**Murray Motor Car Co., Pittsburgh, Pa.**

MURRAY CHASSIS, Pg. 40

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| 1918 | Touring | 8 | 7 | $2800 |
| 1918 | Roadster | 8 | 2 | 2800 |
| 1918 | Touring | 8 | 4 | 2800 |
| 1918 | Limousine | 8 | 7 | 4000 |
| 1918 | Cabriolet | 8 | 3 | 3600 |

### N

**Nash Motors Co., Kenosha, Wis.**

NASH CHASSIS, Pg. 37

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| 681 | Touring | 6 | 5 | $1295 |
| 683 | Roadster | 6 | 4 | 1295 |
| 684 | Sedan | 6 | 5 | 1985 |
| 671* | Touring | 6 | 7 | 1465 |

*Old Model.

**National Motor Car and Vehicle Corp., Indianapolis, Ind.**

NATIONAL CHASSIS, Pg. 33-37-40

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| Highway 6 | Touring | 6 | 7 | $1995 |
| Highway 6 | Sport Phaeton | 6 | 4 | 1995 |
| Highway 6 | Roadster | 6 | 4 | 1995 |
| Highway 6 | Touring Sedan | 6 | 7 | 2820 |
| Highway 12 | Touring | 12 | 7 | 2595 |
| Highway 12 | Sport Phaeton | 12 | 4 | 2595 |
| Highway 12 | Roadster | 12 | 4 | 2595 |
| Highway 12 | Touring Sedan | 12 | 7 | 3420 |
| Highway 12 | Speedster | 12 | 2 | 2650 |

Government's War Revenue Tax Extra Charge.

**E. A. Nelson, Detroit, Mich.**

NELSON CHASSIS, Pg. 32

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| 1917-18 | Semi-Speedster | 4 | 2 | $1200 |
| 1917-18 | Touring | 4 | 4 | 1400 |

**Nordyke & Marmon Co., Indianapolis, Ind.**

MARMON CHASSIS, Pg. 36

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| 34 | Touring | 6 | 7 | $3550 |
| 34 | Touring | 6 | 5 | .... |

### O

**Oakland Motor Car Co., Pontiac, Mich.**

OAKLAND CHASSIS, Pg. 37

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| 34-B | Touring | 6 | 5 | $990 |
| 34-B | Roadster | 6 | 3 | 990 |
| 34-B | Coupe | 6 | 4 | 1490 |
| 34-B | Touring Sedan | 6 | 5 | 1190 |
| 34-B | Roadster Coupe | 6 | 2 | 1150 |

**Olds Motor Works, Lansing, Mich.**

OLDSMOBILE CHASSIS, Pg. 34-40

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| 45-A | Touring | 8 | 7 | $1467 |
| 45-A | Sportster | 8 | 5 | 1550 |
| 45 | Club Roadster | 8 | 4 | 1467 |
| 37 | Touring | 6 | 5 | 1185 |
| 37 | Roadster | 6 | 2 | 1185 |
| 37 | Sedan | 6 | 5 | 1695 |
| 37 | Coupe | 6 | 4 | 1595 |

**Olympian Motor Co., Pontiac, Mich.**

OLYMPIAN CHASSIS, Pg. 32

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| 40 | Touring | 4 | 5 | 965 |
| 45 | Touring | 4 | 5 | $1085 |
| 40 | Roadster | 4 | 4 | 965 |
| 45 | Roadster | 4 | 4 | 1085 |
| 40 | Sedan | 4 | 5 | 1565 |
| 40 | Coupe | 4 | 3 | 1340 |

### P

**Packard Motor Car Co., Detroit, Mich.**

PACKARD CHASSIS, Pg. 40

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| 3-25 | Standard Touring | 12 | 7 | $3700 |
| 3-25 | Salon Touring | 12 | 7 | 2700 |
| 3-25 | Phaeton | 12 | 5 | 3700 |
| 3-25 | Salon Phaeton | 12 | 5 | 3700 |
| 3-25 | Runabout | 12 | 4 | 3700 |
| 3-25 | Limousine | 12 | 7 | 5250 |
| 3-25 | Landaulet | 12 | 7 | 5300 |
| 3-25 | Coupe | 12 | 4 | 5050 |
| 3-25 | Brougham | 12 | 6 | 5300 |
| 3-25 | Brougham | 12 | 7 | 5400 |
| 3-25 | Imperial Limousine | 12 | 7 | 5450 |
| 3-25 | Chassis only | 12 | .. | 3300 |
| 2-35 | Standard Touring | 12 | 7 | 4100 |
| 3-35 | Salon Touring | 12 | 7 | 4100 |
| 3-35 | Limousine | 12 | 7 | 5650 |
| 3-35 | Landaulet | 12 | 7 | 5700 |
| 3-35 | Brougham | 12 | 7 | 5800 |
| 3-35 | Imperial Limousine | 12 | 7 | 5850 |
| 3-35 | Chassis only | 12 | .. | 3600 |

**Paige-Detroit Motor Car Co., Detroit, Mich.**

PAIGE CHASSIS, Pg. 37-38-41

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| 39 | Linwood Touring | 6 | 5 | $1330 |
| 39 | Dartmoor Roadster | 6 | 2-3 | 1330 |
| 39 | Glendale Chum. Rd. | 6 | 4 | 1330 |
| 39 | Sedan | 6 | 5 | 1925 |
| 55 | Essex Touring | 6 | 7 | 1775 |
| 55 | Sedan | 6 | 7 | 2850 |
| 55 | Coupe | 6 | 3-4 | 2850 |
| 55 | Limousine | 6 | 7 | 3230 |
| 55 | Town car | 6 | 7 | 3230 |

**Pan-American Motors Co., Chicago, Ill.**

AMERICAN BEAUTY CHASSIS, Pg. 38

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| G-6-5 | Touring | 6 | 5 | $1500 |
| G-6-4 | Close Coupled Tour. | 6 | 4 | 1525 |
| G-6-4 E | Close Coup. T. Sed. | 6 | 4 | 1850 |

**Pan Motor Co., St. Cloud, Minn.**

PAN CHASSIS, Pg. 33

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| 250 | Touring | 4 | 5 | $950 |

Subject to Change.

**W. A. Paterson Co., Flint, Mich.**

PATERSON CHASSIS, Pg. 38

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| 6-45 | Touring | 6 | 5 | $1265 |
| 6-45 | Touring | 6 | 7 | 1295 |
| 6-45 | Roadster | 6 | 4 | 1295 |
| 6-45 | Sedan | 6 | 5 | 1795 |

**Peerless Motor Car Co., Cleveland, O.**

PEERLESS CHASSIS, Pg. 40

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| 56 | Touring | 8 | 7 | $2340 |
| 56 | Roadster | 8 | 4 | 2340 |
| 56 | Sedan | 8 | 7 | 2990 |
| 56 | Coupe | 8 | 4 | 2850 |
| 56 | Limousine | 8 | 7 | 3690 |
| 56 | Sporting Roadster | 8 | 2 | 2490 |

**Pierce-Arrow Motor Car Corp., Buffalo, N. Y.**

PIERCE-ARROW CHASSIS, Pg. 38

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| 38-C-4 | Runabout | 6 | 2 | $4800 |
| 38-C-4 | Runabout | 6 | 3 | 4800 |
| 38-C-4 | Coupe | 6 | 2 | 5700 |
| 38-C-4 | Coupe | 6 | 3 | 5700 |
| 38-C-4 | Touring | 6 | 4 | 4800 |
| 38-C-4 | Touring | 6 | 5 | 4800 |
| 38-C-4 | Brougham | 6 | .. | 5900 |
| 38-C-4 | Landaulet | 6 | .. | 5900 |
| 38-C-4 | Sedan | 6 | .. | 5900 |
| 38-C-4 | Vestibule Brougham | 6 | .. | 6100 |
| 38-C-4 | Brougham-Landaulet | 6 | .. | 5900 |
| 38-C-4 | Vestibule Landaulet | 6 | .. | 6100 |
| 38-C-4 | Vest. Broug.-Land. | 6 | .. | 6100 |
| 38-C-4 | French Brougham | 6 | .. | 5900 |
| 38-C-4 | French Broug.-Land. | 6 | .. | 5900 |
| 38-C-4 | Town Brougham | 6 | .. | 5900 |
| 38-C-4 | Town Broug.-Land. | 6 | .. | 5900 |
| 38-C-4 | Roadster | 6 | 4 | 4800 |
| 38-C-4 | Convertible Roadster | 6 | .. | 5700 |
| 48-B-4 | Runabout | 6 | 2 | 5400 |
| 48-B-4 | Runabout | 6 | 3 | 5400 |
| 48-B-4 | Coupe | 6 | 2 | 6400 |
| 48-B-4 | Coupe | 6 | 3 | 6400 |
| 48-B-4 | Touring | 6 | 4 | 5400 |
| 48-B-4 | Touring | 6 | 5 | 5400 |
| 48-B-4 | Touring | 6 | 7 | 5500 |
| 48-B-4 | Brougham | 6 | .. | 6600 |

| | | | | |
|---|---|---|---|---|
| 48-B-4 | Suburban | 6 | .. | 6800 |
| 48-B-4 | Landau | 6 | .. | 6800 |
| 48-B-4 | Suburban Landau | 6 | .. | 6800 |
| 48-B-4 | Vestibule Suburban | 6 | .. | 7000 |
| 48-B-4 | Vestibule Landau | 6 | .. | 7000 |
| 48-B-4 | Vestibule Brougham | 6 | .. | 7000 |
| 48-B-4 | Vest. Suburban Land. | 6 | .. | 7000 |
| 48-B-4 | Roadster | 6 | 4 | 5400 |
| 48-B-4 | Convertible Roadster | 6 | .. | 6400 |
| 66-A-4 | Runabout | 6 | 4 | 6400 |
| 66-A-4 | Runabout | 6 | 3 | 6400 |
| 66-A-4 | Coupe | 6 | 2 | 7400 |
| 66-A-4 | Coupe | 6 | 3 | 7400 |
| 66-A-4 | Touring | 6 | 4 | 6400 |
| 66-A-4 | Touring | 6 | 5 | 6400 |
| 66-A-4 | Touring | 6 | 7 | 6500 |
| 66-A-4 | Brougham | 6 | .. | 7600 |
| 66-A-4 | Suburban | 6 | .. | 7800 |
| 66-A-4 | Suburban Landau | 6 | .. | 7800 |
| 66-A-4 | Vestibule Suburban | 6 | .. | 8000 |

**Pilgrim Motor Car Co., Detroit, Mich.**

PILGRIM CHASSIS, Pg. 23

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| 37 | Touring | 4 | 5 | $895 |
| 37 | Roadster | 4 | 4 | 895 |

**Pilot Motor Car Co., Richmond, Ind.**

PILOT CHASSIS, Pg. 38

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| 6-45 | Touring | 6 | 5 | $1295 |
| 6-45 | Roadster | 6 | 4 | 1295 |
| 6-45 | Demountable Sedan | 6 | 5 | 1520 |
| 6-45 | Demountable Coupe | 6 | 4 | 1520 |

**F. R. Porter Co., Port Jefferson, N. Y.**

F. R. P. CHASSIS, Pg. 31

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| 45-A | Touring Chassis | 4 | 7 | $7000 |
| 45-B | Tour. Chassis | 4 | 7 | 7000 |

**Premier Motor Corp., Indianapolis, Ind.**

PREMIER CHASSIS, Pg. 38

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| 6-C | Touring | 6 | 7 | $2285 |
| 6-C | Roadster | 6 | 4 | 2285 |
| 6-C | Tour. Lim. Sedan | 6 | 7 | 3285 |

**Princess Motor Car Corp., Detroit, Mich.**

PRINCESS CHASSIS, Pg. 33

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| 4-36 | Touring | 4 | 5 | $825 |
| 4-36 | Roadster | 4 | 3 | 825 |
| 4-36 | Speedster | 4 | 2 | 825 |

### R

**Regal Motor Car Co., Detroit, Mich.**

REGAL CHASSIS, Pg. 33-39

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| J | Touring | 4 | 5 | $795 |

**Reo Motor Car Co., Lansing, Mich.**

REO CHASSIS, Pg. 33-38

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| R | Touring | 4 | 5 | $985 |
| R | Roadster | 4 | 2 | 985 |
| M | Touring | 6 | 7 | 1385 |
| N | Roadster | 6 | 4 | 1385 |

### S

**Saginaw Motor Car Co., Saginaw, Mich.**

YALE EIGHT CHASSIS, Pg. 40

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| M | Touring | 8 | 7 | $1950 |
| M-R | Roadster | 8 | 4 | 1950 |
| M-S | Speedster | 8 | 4 | 1950 |

**Saxon Motor Car Co., Detroit, Mich.**

SAXON CHASSIS, Pg. 33-38

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| B-5-R | Roadster | 4 | 2 | $445 |
| S-4-T | Touring | 6 | 5 | 935 |
| S-4-R | Roadster, chummy | 6 | 3 | 935 |
| S-4-S | Sedan | 6 | 5 | 1395 |

**Sayers & Scovill Co., Cincinnati, O.**

SAYERS CHASSIS, Pg. 38

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| Light Six | Touring | 6 | 5 | $1295 |

**Scripps-Booth Corp., Detroit, Mich.**

SCRIPPS-BOOTH CHASSIS, Pg. 38

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| Six 39 | Touring | 6 | 5 | $1250 |
| Six 40 | Roadster | 6 | 3 | 1425 |
| H | Four Passenger | 8 | 4 | 1585 |

**Seneca Motor Car Co., Fostoria, O.**

SENECA CHASSIS, Pg. 33

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| D | Five Passenger Open | 4 | 5 | $850 |
| E | Four-Passenger Road | 4 | 4 | 900 |
| F | Light Delivery | 4 | .. | 825 |

**Singer Motor Co., Inc.. New York City.**

SINGER CHASSIS, Pg. 38

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| 12 | Touring | 6 | 7 | $3300 |

**Shadbourne Combined Motors Co., Chicago, Ill.**

BOUR-DAVIS CHASSIS, Pg. 24

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| 18-B | Touring | 6 | 5 | $1650 |

**Standard Steel Car Co., Pittsburgh, Pa.**

STANDARD CHASSIS, Pg. 40

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| G | Touring | 8 | 7 | $2450 |
| G | Roadster | 8 | 4 | 2450 |
| G | Roadster | 8 | 2 | 2450 |
| G | Sedan | 8 | 7 | 3500 |
| G | Limousine | 8 | 7 | 4000 |
| G | Coupe | 8 | 3 | 3500 |

**The F. B. Stearns Co., Cleveland, O.**

STEARNS-KNIGHT CHASSIS, Pg. 33-40

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| S. K. L. 4 | Touring | 4 | 5 | $1785 |
| S. K. 8 | Touring | 8 | 7 | 2575 |

**Stephens Motor Branch Moline Plow, Moline, Ill.**

STEPHENS-SIX CHASSIS, Pg. 38

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| 70 | Roadster | 6 | 3 | $1485 |
| 74 | Roadster | 6 | 4 | 1550 |
| 75 | Roadster | 6 | 5 | 1485 |
| 78 | Sedan | 6 | 5 | 1985 |

**The Studebaker Corporation of America, South Bend, Ind.**

STUDEBAKER CHASSIS, Pg. 33-39-41

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| S. H. | Touring | 4 | 5 | .... |
| S. H. | Roadster | 4 | 2 | .... |
| S. H. | Sedan | 4 | 5 | .... |
| E. H. | Touring | 6 | 5 | .... |
| E. H. | Roadster | 6 | 2 | .... |
| E. H. | Roadster | 6 | 4 | .... |
| E. H. | Sedan | 6 | 5 | .... |
| E. G. | Touring | 6 | 7 | .... |
| E. G. | Sedan | 6 | 7 | .... |

**Stutz Motor Car Co., Indianapolis, Ind.**

STUTZ CHASSIS, Pg. 33-35

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| S-400 | Speedster | 4 | 2 | $2550 |
| S-400 | Roadster | 4 | 2 | 2550 |
| S-400 | Close Couple | 4 | 4 | 2650 |
| S-400 | Touring | 4 | 6-7 | 2750 |

### T

**The Templar Motors Corp., Cleveland, O.**

TEMPLAR CHASSIS, Pg. 33

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| 445 | Roadster | 4 | 2 | $2255 |
| 445 | Victoria | 4 | 4 | 2155 |
| 445 | Touring | 4 | 4 | 1985 |
| 445 | Salon Touring | 4 | 5 | 1985 |

**Traverse City Motor Car Co., Traverse City, Mich.**

NAPOLEON CHASSIS, Pg. 32-37

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| 18-35 | Chummy | 4 | 4 | $1085 |
| 18-36 | Streamline Pleasure | 4 | 5 | 1085 |
| 18-38 | Closed Delivery | 4 | .. | 1040 |
| 18-39 | Pleasure | 6 | 5 | 1385 |

**Trumbull Motor Car Co., Philadelphia, Pa.**

TRUMBULL CHASSIS, Pg. 33

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| 16 B | Roadster | 4 | 2 | $495 |
| 16 B | Coupe | 4 | 2 | 750 |

### V

**Velie Motors Corp., Moline, Ill.**

VELIE-BILTWEL CHASSIS, Pg. 39

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| 38 | Touring | 6 | 5 | $1840 |

### W

**Watson & Stoeckel, New York.**

KNIGHT SPECIAL CHASSIS, Pg. 31

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| B | Chassis | 4 | .. | $5000 |

**The Westcott Motor Car Co., Springfield, O.**

WESTCOTT CHASSIS, Pg. 39

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| 18 | Touring | 6 | 7-5 | $1940 |
| 18 | Roadster | 6 | 4 | 1890 |
| 18 | Sedan, convertible | 6 | 7-5 | 2790 |
| 18 | Coupe, convertible | 6 | 4 | 2790 |
| 18 | Sportster | 6 | 5 | 2290 |

**The White Co., Cleveland, O.**

WHITE CHASSIS, Pg. 33

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| G. M. | Chassis | 4 | .. | $3900 |
| G. M. | Touring | 4 | 7 | 5000 |
| G. M. | Limousine | 4 | 7 | 6200 |
| G. M. | Landaulet | 4 | 7 | 6200 |
| G. M. | Cabriolet | 4 | 7 | 6400 |
| G. M. T. | Chassis | 4 | .. | 3850 |
| G. M. T. | Runabout | 4 | 4 | 5000 |
| G. M. T. | Town car | 4 | 6 | 6050 |
| G. M. T. | Town car Landaulet | 4 | 6 | 6050 |
| G. M. T. | Sedan | 4 | 4 | 6050 |
| G. M. T. | Coupe | 4 | 3 | 6050 |

**Willys-Overland Co., Toledo, O.**

OVERLAND CHASSIS, Pg. 32-37

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| Country Club | Roadster | 4 | 4 | $840 |
| 90 | Touring Car | 4 | .. | 795 |
| 90 | Roadster | 4 | .. | 780 |
| 90 | Sedan | 4 | .. | 1240 |
| 85-4 | Touring | 4 | 5 | 930 |
| 85-4 | Roadster | 4 | 2 | 915 |
| 85-6 | Touring | 6 | 5 | 1120 |
| 85-6 | Tour. Sedan | 6 | 5 | 1620 |
| 85-6 | Tour. Coupe | 6 | 3 | 1420 |

WILLYS-KNIGHT CHASSIS, Pg. 33-40

| | | | | |
|---|---|---|---|---|
| 88-4 | Touring | 4 | 7 | 1525 |
| 88-4 | Coupe | 4 | 4 | 2175 |
| 88-8 | ...... ...... | 8 | .. | 2000 |
| 88-8 | Tour. Sedan | 8 | .. | 2700 |
| 88-8 | Limousine | 8 | .. | 2800 |
| 88-8 | Town car | 8 | .. | 2800 |

WILLYS-SIX CHASSIS, Pg. 37

| | | | | |
|---|---|---|---|---|
| 89-6 | Touring | 6 | 7 | 1525 |
| 89-6 | Sedan | 6 | 6 | 2045 |

**Winton Co., Cleveland, O.**

WINTON CHASSIS, Pg. 39

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| 33 | Touring | 6 | 7 | $3000 |
| 33 | Touring | 6 | 5 | 2900 |
| 48 | Touring | 6 | 7 | 3500 |

**Wolverine Motor Car Co., Kalamazoo, Mich.**

WOLVERINE CHASSIS, Pg. 33

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| Speedway Special | Roadster | 4 | 2 | $3500 |
| Sport | Touring | 4 | 4 | 3750 |

**Woods Motor Vehicle Co., Chicago, Ill.**

WOODS DUAL POWER CHASSIS, Pg. 34

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| 54 | Coupe | 4 | 4 | $2950 |

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## ELECTRIC CARS

### A

**Anderson Electric Car Co., Detroit, Mich.**

DETROIT ELECTRIC CHASSIS, Pg. 41

| Model | Body | Pas. | Price |
|---|---|---|---|
| 71 | Brougham | 4 | $2940 |
| 72 | Brougham | 5 | 3015 |
| 73 | Brougham | 5 | 2990 |
| 74 | Brougham | 5 | 3040 |
| 75 | Brougham | 4 | 2275 |
| 76 | Roadster | 3 | 2375 |

### B

**Baker R. & L. Co., Cleveland, O.**

RAUCH & LANG CHASSIS, Pg. 41

| Model | Body | Pas. | Price |
|---|---|---|---|
| BX | Brougham | 4 | $3000 |
| J | Coach | 5 | 3200 |

### F

**The Fritchle Co., Denver, Col.**

FRITCHLE CHASSIS, Pg. 41

| Model | Body | Pas. | Price |
|---|---|---|---|
| .. | Colonial Brougham | 5 | $2600 |
| .. | Colonial Coupe | 4 | 3200 |

### H

**Hupp-Yeats Electric Car Co., Detroit, Mich.**

HUPP-YEATS CHASSIS, Pg. 41

| Model | Body | Pas. | Price |
|---|---|---|---|
| 4 Regent B | Coupe | 4 | $1750 |
| 5 Patrician | Coupe | 4 | 2000 |

### M

**Milburn Wagon Co., Toledo, O.**

MILBURN CHASSIS, Pg. 41

| Model | Body | Pas. | Price |
|---|---|---|---|
| 27 | Electric Brougham | 4 | $1885 |

### O

**The Ohio Electric Co., Toledo, O.**

OHIO CHASSIS, Pg. 41

| Model | Body | Pas. | Price |
|---|---|---|---|
| 44 | Coupe | 5 | *$2680 |
| 63 | Coupe | 5 | 3250 |

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*War tax extra.

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## STEAM CARS

**Doble-Detroit Steam Motors Co., Detroit, Mich.**

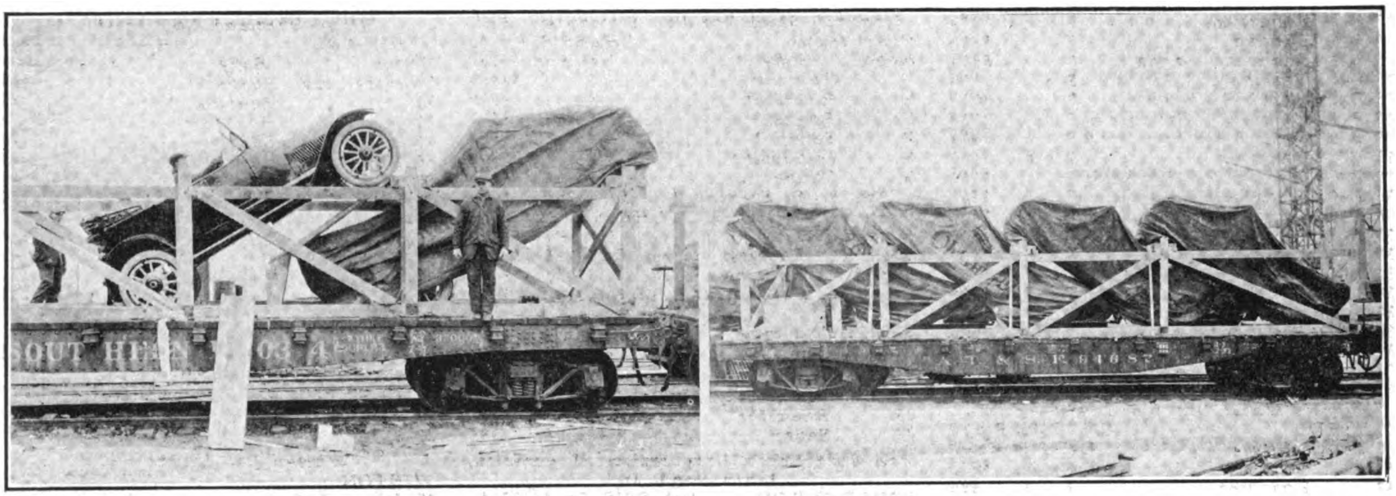
DOBLE-DETROIT CHASSIS, Pg. 41

| Model | Body | Pas. | Price |
|---|---|---|---|
| D | Touring | 7 | $3750 |

**Stanley Motor Carriage Co., Newton, Mass.**

STANLEY CHASSIS, Pg. 41

| Model | Body | Cyl. | Pas. | Price |
|---|---|---|---|---|
| 735 | Touring | 2 | 7 | $2600 |
| 736 | Touring | 2 | 5 | 2550 |



**Car Loading Expedient Adopted by the Traffic Department of the Olds Motor Works, Lansing, Mich., Since the Automobile Freight Car Is Nowadays One of the Rarest of Visitors to an Automobile Plant.**

# HAPPENINGS AMONG THE CAR AND PARTS MAKERS

## What Several of the Leading Manufacturers in the Motor Vehicle Industry and Allied Lines Are Doing or Have Under Consideration

**The Olds Motor Works**, Lansing, Mich., takes a flat car and builds a heavy frame work around it about six feet high of 6x6 timbers. There are heavy cross members at the top of this frame into which the front wheels of the automobile rest while the hind wheels rest on the floor and carry most of the weight. The car is then loaded under its own power, being driven up on skids at almost a 40-degree grade. When the front wheels drop into place the car rests at an angle of about 33 degrees.

**The Bosch Magneto Co.** held the annual sales conference recently at the executive offices in New York. Daily sessions were held and both the main office and branch executives spoke in a very optimistic tone of the outlook, especially in view of the present excellent position of the factory, as regarding labor and materials. Mr. F. D. Norman, superintendent, outlined the present favorable conditions obtaining at the works.

**The Pan-American Motors Corporation**, Chicago, Ill., has elected Edward Danner as its president to succeed Arthur H. Wyatt, and with the change the control of management also passed. The new interests have decided to locate the main offices and plant at Decatur, Ill., and will only have a sales room in Chicago.

**The Triangle Truck Co.**, St. Johns, Mich., has increased its capital stock from $50,000 to $100,000. The first 1½-ton truck has been completed and the new factory is in process of construction.

**The Empire Auto Co.**, Indianapolis, Ind., announces that their loss of about 300 finished automobiles stored in the Industrial building, that city, destroyed by fire Jan. 13 in a $2,000,000 blaze, is fully covered by insurance. It is further announced that no raw material was lost by this company and the fire will cause no interruption of production and delivery of Empire cars.

**William H. Race & Sons Motor Co.**, Buffalo, N. Y., has been incorporated with a capital of $100,000 by B. T. Blinder, Frank Hahl and Benjamin Singer. The company will manufacture tires.

**The Kant Freeze Radiator Co.**, Anderson, Ind., has been incorporated with a capital of $20,000. The company will manufacture motor car radiator equipment. The incorporators are: Allen C. Shimmer, William J. Norton, Charles T. Norton.

**The Continental Motors Corporation**, Detroit, Mich., is planning to build a two-story brick, steel and reinforced concrete addition to its plant on Jefferson and Bezner avenues.

**The Trenam Tractor Co.**, Milwaukee, Wis., which was organized several months ago to manufacture and market a farm and general purpose tractor, has decided to establish its permanent plant and headquarters in Stevens Point, Wis. It has a capital of $400,000. The officers of the company are: President and general manager, J. J. Trenam; vice president, R. A. Cook; secretary and treasurer, F. M. Schuler; directors, G. A. Gullikson, Otto Lay and Dr. Conrad Tasche.

**The Mueller Metals Co.**, Port Huron, Mich., has received a contract for $1,000,000 for the manufacture of gas shells for the French 75 millimeter guns. A new plant is rapidly being completed.

**The Larrabee-Deyo Motor Truck Co., Inc.**, Binghamton, N. Y., has put on the market a new five-ton model Larrabee, known as model T. At the annual meeting the company re-elected the officers. R. H. Deyo, the vice president and general manager, reported an increase in business of 210 per cent.

**The Troy Wagon Works Co.**, Troy, O., has received a government order calling for 100 two to five-ton Troy trailers of special design for the Signal Corps.

**The Mason Tire and Rubber Co.** have established truck service between Kent, O., where the factory is located, and the distributor at Pittsburgh, Pa., placing the company in a position to take care of the rapidly growing business in the present conditions of restricted freight service by the railroads.

**Frederick H. Mix** has been promoted from the staff of the Joseph Dixon Crucible Co. at 68 Reade street, New York City, to the position of assistant to Herman Price, head of the pencil department at the general offices, Jersey City. Mr. Mix, who has been with the Dixon company since 1909, has been handling various Dixon graphite products, but will hereafter concentrate on the line of Dixon's pencils.

**John F. Guider**, who has been an executive with the Pierce-Arrow Motor Car Co. for the past 12 years, has been elected vice president of the Cadillac Motor Car Co., in charge of manufacturing. He assumed charge of the production of Cadillac cars in Detroit, Jan. 1.

**The Prest-O-Lite Co., Inc.**, Indianapolis, Ind., has appointed the following firms and individuals as distributors of Acetylene products: Motor Supply Co., 49 N. Sixth St., Tuscon, Ariz.; Gavin-Williams, 1300 Fifth St., San Diego, Cal.; C. Tobie Wellande, 40 Sandorf St., St. Augustine, Fla.; Lebannon Electric Co., 26 N. Ninth St., Lebannon, Pa.; Hartnett-Salley Co., Orangeburg, S. C.; Washtenaw Electric Shop, 200 E. Washington St., Ann Arbor, Mich.; Ferguson Bros., 529 12th St., Miami, Fla.; J. C. Killgore & Co., 622-624 Franklin St., Waco, Tex.; A. E. Bunday, 418 Fifth St., Brookling, S. D.; The Lewis Motor Mart Co., 27 E. Second St., Dayton, O.; Bay City Battery Service Co., Bay City, Mich.; Roanoke Cycle Co., 103 Campbell Ave., Roanoke, Va.; Sheldon Hardware Co., Janesville, Wis.; George R. Napier, Cotton Ave. and Poplar St, Macon, Ga.; F. W. Turner, Willard and First Ave., East, Dickinson, N. D.; Escanaba Hardware Co., Escanaba, Mich.; Gates & Graves Electric Co., 429 Detroit St., Flint, Mich.; Lea Duholm, Austin, Minn.; Interstate Garage, Breckenridge, Minn.; Electric Specialty Tire Co., 119 N. Central Ave., Fairbault, Minn.; C. A. Norman, 215 Center St., Hibbing, Minn.; Mankato Battery and Supply Co., Mankato, Minn.; Marshall Auto Co., 429 W. Main St., Marshall, Minn.; E. K. Myrick, Greenwood, Miss.; Bertram Motor Supply Co., Inc., 224 S. Main St., Butte, Mont.; Statham Garage and Repair Shop, Glendive, Mont.; Bay City Battery Service Co., Bay City, Mich.; Harrisburg Garage, 217 Poplar St., Harrisburg, Ill.; Byars Garage, Marion, S. C.; John H. Cocell, 480 Main St. and 18 Lake Ave., Watsonville, Cal.; Cartwright Garage, 419-21 Main St., Rocky Ford, Col., J. C. Cartwright, proprietor; The Standard Auto Supply Co., 113 Market St., Harrisburg, Pa.; The Knight Auto Co., Plainview, Tex.; O. C. Kewp & Son, south end of Main St., Greenville, Mich.; Ewings Garage, 220 N. Main St., Nenada, Mont.

**The Kelly-Springfield Tire and Rubber Co.**, New York, has established a branch house at 426 Jefferson street, Milwaukee, Wis., in charge of J. A. Glaspy.

**The Curtis Aeroplane and Motors Corporation**, Buffalo, N. Y., has declared a semi-annual dividend of 3½ per cent. on preferred stock, payable Jan. 15 to stock of record Jan. 2.

**The American Forge and Machine Co.**, Canton, O., is erecting a steel building 40 by 100 feet. This is to be used as a heat treating department. The building will be equipped with car type furnace heat receiving instruments and quenching tanks and testing machines of various types will be installed.

**The Haskelite Co.**, Grand Rapids, Mich., is starting the erection of its new plant. The company manufactures veneer parts for airplanes. Pending its completion one of the new buildings of the United Motor Truck Co. will probably be used for experimental work in the making of airplane bodies.

**The Bovey Automobile Heater Co.**, Chicago, Ill., has been incorporated with a capital stock of $30,000. The company will manufacture Bovey heaters. The incorporators are the following: Thomas Bovey, Sidney J. Bovey and Frank Thomason.

**The Zelle Tractor Co.**, St. Louis, Mo., has been organized to manufacture a tractor designed by William C. Zelle, a local engineer. The tractor has a 33-inch clearance, which enables its use as a cultivator of growing crops. Mr. Zelle is president of the new company.

**The Westinghouse Electric and Manufacturing Co.**, Pittsburgh, Pa., has declared a regular quarterly dividend of 1¾ per cent. on common, payable Jan. 31 to stock of record Dec. 31, and a dividend of 20 per cent. in stock payable Jan. 15 to stock of record Dec. 31.

**The Safety Signal Corporation**, Peoria, Ill., has incorporated with a capital of $200,000. The company will manufacture a safety device for motor cars. The incorporators are B. F. Hartdesty, W. H. Kirk and H. O. Johnson.

**The Studebaker Corporation**, Detroit, Mich., has secured a building permit for the erection of a four-story brick and steel factory, 325 by 51 feet. The building will cost approximately $150,000.

**The Engineering and Sales Corporation, Chicago, Ill.**, has taken over the engineering problems and supervision of purchases of the Oklahoma Auto Manufacturing Co., Muskogee, Okla., and of the Mutual Truck Co., Sullivan, Ind.

**The Bradford Co.**, Appleton, Wis., has been organized to deal in motor cars, accessories and supplies. The company has a capital of $25,000. The incorporators are the following: H. N. Bradford, Benjamin Will and E. Wild Bradford.

**The Motor Products Corporation**, Detroit, Mich., has acquired the windshield department of the Page Steel and Wire Co.

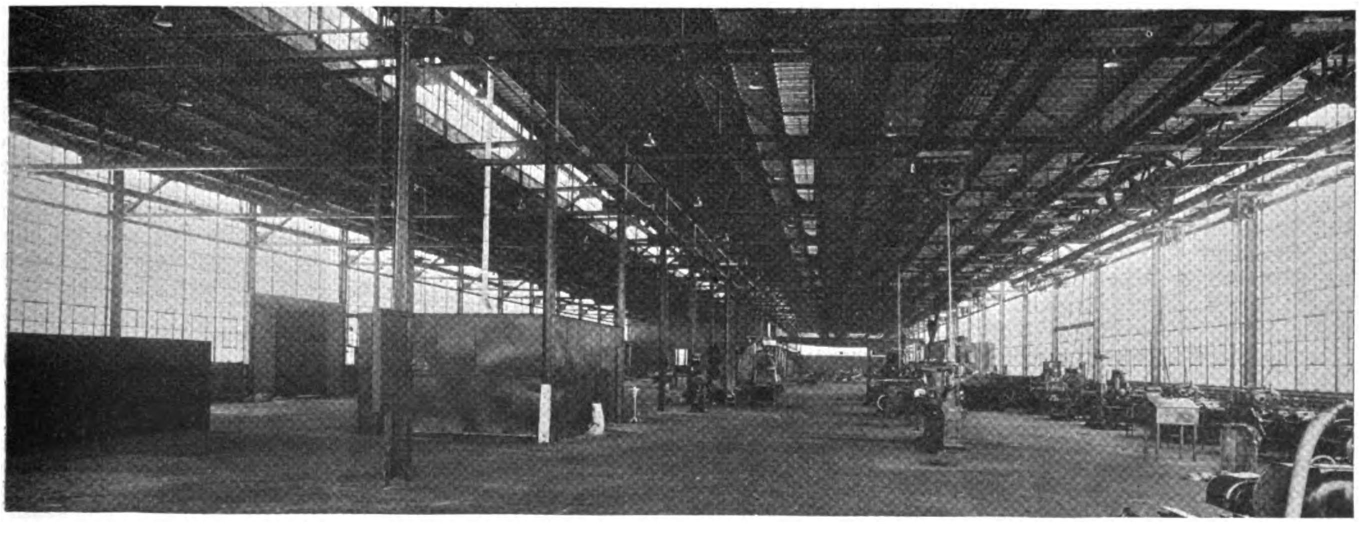
**The McQuay-Norris Manufacturing Co.**, St. Louis, Mo., makers of Leak Proof Piston Rings, are putting on the market a new type of ring to be known as the Superoyl. It is designed to correct oil troubles and is a concentric ring with an oil reservoir put into it at an angle of 45 degrees from the intersection of the cylinder walls and the lower groove bearing face of the ring, providing a scraping edge. It will be manufactured in all sizes for use in the upper groove of each piston.

**The Fisher Body Corporation** for the quarter ending Oct. 31 shows a net surplus of $993,561, a gain of $246,211 over the preceding quarter. After dividends on the $5,000,000 outstanding preferred stock there is an available balance equal to $4.53 a share for the 200,000 shares of common stock.

**The Lexington-Howard Co.**, Connersville, Ind., announced a new schedule of prices on two models of the "O" series, which went into effect on Dec. 20. The new list, which does not change the prices of any of the series "R" Lexingtons, quotes the Clubster at $1385 and the Coupe at $1545.

**The Ballman-Whitten Manufacturing Co.** have moved into their new quarters at 4440 Olive street, St. Louis, Mo., and are now turning out B. & W. ammeters in large quantities under the management of E. W. Martin, formerly with the Ford Motor Co. They have appointed the following distributors: Electric Appliance Co., Chicago, Ill.; Alexander-Seewald Co., Atlanta, Ga.; Ozburn-Abston & Co., Memphis, Tenn.; W. R. Wheeler Co., Indianapolis, Ind.; Shapleigh Hardware Co., St. Louis, Mo.

**The Imperial Oil Co.**, 3124 Locust St., St. Louis, Mo., manufacturers of Evr-Lastin Gear Compound, have arranged for distribution of their products through the following jobbers: Fred Campbell Auto Supply Co., St. Louis, Mo.; Wyeth Hardware Co., St. Joseph, Mo.; Lee Hardware Co., Salina, Kan.; Electric Appliance Co., Dallas, Tex.; Doty Oil and Supply Co., Oklahoma City, Okla.; George W. Bolton & Co., Detroit, Mich.; George W. Nock Co., Inc., Philadelphia, Pa.; Gildehaus Co., Centralia, Ill.



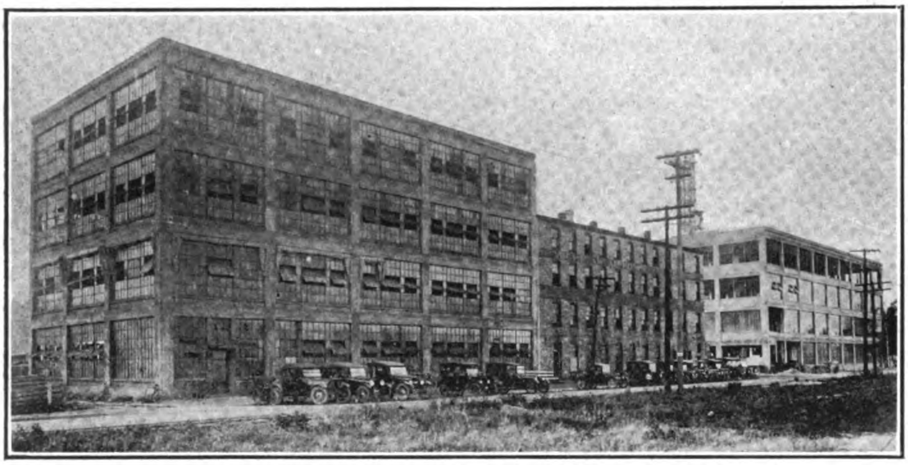
**Tractor Plant of the Pullmore Motor Truck Co., Newcastle, Pa., a Commodious and Busy Plant of Austin Standard Design, Erected with a Special Height of 18 Feet Under the Trusses.**

**The National Wire Works, Inc.**, Geneva, N. Y., has increased its capitol from $350,000 to $1,000,000. Additional buildings will be erected and the production increased to 2000 wheels daily.

**The Sherman Stiveson Tire and Rubber Co.**, North Scottsdale, Pa., has been incorporated and has purchased the buildings of the F. A. Black Manufacturing Co. The new company will manufacture a puncture proof tire made entirely of fabric and rubber without wire or inner tube. It is built with a removable tread and can be retreaded and renovated.

**The Jones Motor Car Co.**, Wichita, Kan., manufacturers of the Jones line passenger cars and trucks, has announced the completion of a contract whereby the Continental Motors company will furnish model 9N motors for the new series 27 A-B-C Jones. The Lewis motor will be continued in model 26 A-B-C. The one and two-ton Jones trucks will use the Continental motors.

**The Gustin-Bacon Manufacturing Co.** has disposed of its retail tire service business at Kansas City, Mo. The company will continue the distribution of Miller tires in the territory of Western Missouri, Kansas and Oklahoma.



Plant of the Fuller & Sons Mfg. Co., Kalamazoo, Mich., Makers of Automobile Parts, Specializing Transmissions and Clutches.

**The Fuller & Sons Manufacturing Co.**, Kalamazoo, Mich., is now in its new plant. It has approximately 100,000 square feet of floor space and consists mainly of fireproof construction. The building is heated by forced circulation and steel sashes are used to give a maximum amount of daylight.

**The Porter Rubber Co.**, Salem, O., has been reorganized with Louis W. Hicks, Pittsburgh, as president, and Grant Hicks, Salem, as treasurer. H. A. Boyd is vice president.

**The S. Smith & Sons Motor Accessories, Ltd.**, London, England, has opened a buying office in New York at 154 Nassau street, with J. H. Rose in charge. The company has branches in South Africa, Australia, New Zealand and Dutch East Indies and Siam.

**The Pan-American Motors Corporation**, Chicago, Ill., has taken over the Lumb Motor Truck and Tractor Co., Aurora, Ill. The truck manufactured by the company is styled Pan-American.

**The Packard Motor Car Co.**, Detroit, Mich., has established a trucking exchange to service as a truck clearing house. Owners of trucks are listed and when a company requires an additional truck the trucking exchange is advised and obtains an idle truck.

**The Nelson Brothers Co.**, Saginaw, Mich., has completed its first two-ton truck and 50 more are planned within the next two months. The name of the truck is called the "Jumbo." An addition will be made to the factory so that all units can be manufactured.

**The American Tractor Corporation**, Richmond, Va., has been reorganized with a capital of $1,000,000 to manufacture and sell traction engines. The president is F. S. Crosby and H. H. Chalkley secretary.

**The Troy Wagon Works Co.**, Troy, O., has received a government order for 100 two to five-ton Troy trailers of special design for the Signal Corps.

**The Erd Motor Co.**, Saginaw, Mich., will manufacture a kerosene burning tractor motor larger than the present model. This will have greater power and embody radical changes in design. The plant will be expanded to give added facilities for the manufacture of the new tractor.

**The Phoenix Manufacturing Co.**, Eau Claire, Wis., is delivering to the government a number of Phoenix Centipede tractor trucks. They are to be used in the United States Quartermaster's Department in Texas for exhaustive army tests. The trucks were constructed under government supervision and employ the well known creeper type driving principle.

**The Seattle Taxicab and Transfer Co.**, Seattle, Wash., are employing 20 women as taxi drivers to replace men who have joined the army. The new drivers will take the city examination and will be admitted to the Auto Drivers' Union.

**The McFarian Motor Car Co.**, Connersville, Ind., is preparing government work and has signed a contract for the manufacture of 6000 automobile tool chests. This contract will keep the plant in operation to full capacity for several months.

**The Maxwell Motor Co.**, Detroit, Mich., is taking on tool designers, tool makers and die makers. This was made necessary on account of the government contracts which are being placed.

**The Baker R. & L. Co.**, Cleveland, O., manufacturers of the Rauch & Lang electric car, is now manufacturing a new model chassis, styled W-42. It has a wheelbase of 142 inches and new body design. The construction is practically the same with several improvements, including a more powerful motor. There are three body styles, a touring car, sedan and limousine.

**The Smith Wheel, Inc.**, Syracuse, N. Y., will increase its capital from $100,000 to $300,000 and will take over the Globe Malleable Iron Co. The company is now working on war orders.

**The American Oil Motors Co.**, Milwaukee, Wis., has been organized with a capital stock of $1,000,000 by members of the Corporation Finance Co., 309 Caswell block. The company will manufacture an internal combustion engine designed by Charles S. Salfeld. This engine is designed so as to be used on all makes of vehicles, tractors and airplanes.

**The Service Motor Truck Co.**, Wabash, Ind., is planning the construction of two large additions to its plant. One of the buildings will be 75 by 200, and the other 50 by 400. The company recently obtained a government contract for the manufacture of trucks.

**The Darrow Brothers Manufacturing Co.**, Fond du Lac, Wis., has moved into its new plant at Western avenue and Brooke street. The company manufactures sheet metal containers and stampings. A complete rolling mill will be installed to manufacture its own supply of sheet tin.

**The Haskelite Co.**, Grand Rapids, Mich., is preparing to establish a factory near Fuller station. The company has already a factory at Ludington, Mich. It is capitalized at $1,000,000 for the manufacture of special veneer airplane parts.

**The Gillette Tire Co.**, Eau Claire, Wis., is contemplating the erection of two additional stories on its present one-story main factory. The company plans a three-story concrete and brick building, 66x100, adjoining the main factory, made necessary in order to provide for immediate warehousing and shipping facilities.

**The Fred P. Brand Motor Co.**, Cleveland, O., has increased its capital from $30,000 to $250,000.

**United Owners' Supply Co.**, Dover, Del., has been incorporated with a capital of $200,000. The company will manufacture motor cars and vehicles of all kinds. The incorporators are the following: J. Berlinger, P. Zak, B. F. Cowan.

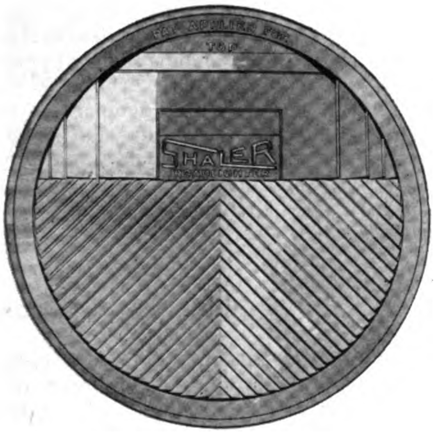
**The United States Aero Propeller Co.**, Milwaukee, Wis., has been organized with a capital of $30,000 to manufacture propellers and other parts for airplanes.

**The Capp Motor Transfer Co.**, Wilmington, Del., has been incorporated to operate private carriers by water and air. The capital is $1,000,000 and the incorporators are: Seth Bunker Capp, F. R. Hansell, J. Vernon Pimm.

# How the Shaler Light Operates

## Improved Prismatic Lens Shows the Road, Wastes No Rays, and Has No Glare

Motorists who have complied with anti-glare laws by dimming their lights, who have so often been at the mercy of somebody else's glaring headlights and recall the sensation of helplessness as they slowed down and timidly turned out to pass, with a ditch and its dangers hidden alongside, are easily interested in the Shaler Roadlighter. The Roadlighter protects one against the glare of headlights one meets, yet with no glare from his own, to endanger other drivers or violate the law. It is a headlight device that gives this advantage because it was designed for the man who uses it as well as for the man who meets it.



The Shaler Roadlighter.

The history of the Roadlighter dates back to the time when there were no anti-glare laws to make the inventors forget that the prime function of any headlight improvement must be to give the user a better driving light than ordinary headlights produce. How to protect themselves from the other fellow's glare, not how were they to safeguard the other fellow, was the important question. Up to that time the only solution had been the use of a spotlight, with its beams thrown sharply down on the edge of the road, enabling the driver to see just how far he could turn out without danger.

The headlight designers reasoned that it was needless to waste light by reflecting it into the tree tops and that it was only logical to deflect the beams, by means of prisms, so that it would all be concentrated on the road ahead.

Working on this principle the experts on lighting took a disc of plate glass and drew a horizontal line across the middle, then with a vertical line they divided the lower half into two equal parts. A series of diagonal prisms were cut into each of these parts, as you can see them in the illustration.

When this had been done it accomplished more than had been expected, the light passing through the clear top half of the glass illuminted the road as it always had, while the light that started upward through the lower half was caught by the groups of prisms and bent downward and to both sides in two intense beams that illuminated not only the edges of the road for 100 feet ahead of the car, but spread a flood of light from fence to fence. It was found that due to the peculiar prismatic effect none of the light rays rose above the level of the headlights, so that the present anti-glare laws were anticipated.

Another point that had been gained was that since there were no longer any upward rays to be reflected back into the driver's eyes by fog particles or rain drops, in the form of "back glare," the driver could now see the road clearly through fog and rain.

Still the inventors were not satisfied, for a considerable part of the beam from the clear upper half of the glass spread out fan like along the sides of the road too far ahead to be of any value. The logical thing to do was to put in a few vertical prisms to bend this wasted light toward the centre of the road and add it to the main long distance beam. A great deal of further experimenting accomplished this so well that at a distance of 200 or 300 feet or more the light on the road was more than twice as strong as when plain glass was used in the headlights. It was also found that accurate focusing of the bulb was no longer necessary, so long as the bulb was placed well forward in its socket, ahead of the so-called focal point of the reflector, a good driving light was assured, without the unlighted spot in the middle of the road common to plain glass and an unfocused headlight.

This is the story of the Shaler Roadlighter, a headlight lens that protects the user against the glare from cars that he meets, by throwing on the edges of the road concentrated beams that enable him always to see clearly how far he may turn out without danger of running into the ditch. It throws light far ahead of the car and stronger than that from a clear glass headlight.

It illuminates the full width of the road for 100 to 150 feet so that one can pick the best traveling as one would in daylight. It enables the driver to see the road through fog, rain or snow, without danger from back flare.

Since there is no glare and the rays do not rise above 42 inches from the ground, regardless of the candle power of the bulbs, it makes lights legal in practically any state without dimming. Sign boards may be read in the soft light thrown off at the sides.

Accurate focusing of the bulb is not necessary. The outside of the lens being smooth, no dirt or grease gathers to obscure or cut off the rays.

## FAW APPOINTS NEW TRAVELING SALES MANAGER.

J. H. Faw, Inc., distributing sales specialists in automobile accessories, 41 Warren street, New York, announces the appointment of J. Crosby White as traveling sales manager. Mr. White, who has had an experience of more than 12 years in the automobile accessory business and is very familiar with it from every angle, will start first on a general tour of the territory, covering the southern states.

Several standard lines of accessories are distributed by the Faw company in addition to the marketing of several items of their own manufacture. The latter include the Fawsco brands, auto crawlers, ignition wiring assemblies, lamp electrifiers, oil cock wrenches, Lennon light protectors, Red Seal spark plugs and automobile fuses. In the distribution list is found Connecticut switches, Culver-Stearns electric specialties, Eureka valve grinding compound, Fitzgerald Manufacturing Co. gaskets, Ideal hose clamps, Tungsol auto lamp bulbs and Walden-Worcester wrenches.

J. Crosby White, New Traveling Sales Representative of J. H. Faw, Inc., New York.

It has been the policy of the firm for the last three years of confining their distribution to jobbers of automobile accessories. The Faw sales slogan "For the Good of the Trade" is quite familiar to the field, which, by the new traveling and the firm's advertising campaign, it is intended to carry much further afield than ever. The firm believes in the gospel of standard accessories and quality merchandise and enters the 1918 campaign affording the jobber opportunity to be actuated by its slogan in sales policy.

## CHAMPION MOTORS CO. CHANGES ADDRESS.

The Champion Motors Co., Cleveland, O., has moved its headquarters from 801 Hippodrome building, that city, to 760 Hippodrome Annex.

# *Against A Tax On Intelligence*

FEW readers of the periodical press of America realize with sufficient clearness the fact that the hasty postal law passed by the last Congress on a zone rate basis places an enormous burden on the reading public. An advertisement on another page of this issue calls attention to how this postal legislation, included in the Revenue Bill, progressively increases the average carrying charge upon newspapers and periodicals from 50 to 900 per cent. It also calls attention to the restrictive and blasting effect that may be expected upon the publishing business in its function as a popular educator.

Never before in the history of this country has it ever crossed the mind of any citizen that it would be necessary to form organizations of readers in order to preserve their right to acquire information regarding their business and greatest interests in the columns of technical and trade papers. Yet this is a burden that falls upon readers now. The heavy increment of postage which the law imposes on the publisher rests there only temporarily. The operation of common sense soon develops that the money increase passes at once to the reader. If zone rates for subscriptions be not imposed the periodical would be so handicapped that it would be compelled to go out of business or lower the value and volume of its contents. Take either horn of the dilemma and it is the reader who suffers.

Postal rates are transportation rates. It is true that the publisher prepays postage. Yet it requires only moderate business acumen to realize that postage is entered on the books as cost of distribution and enters into the price at which the newspaper or periodical is sold.

An increase by a flat rate could be handled more readily than the far reaching, high jumping costs under the zone rate plan. Every fair investigation of the zone rate has shown that it is too full of inequalities for application to the circulation of educational trade periodicals. But it is beside the mark, here, to examine at great length the most efficacious method that the government may find to levy a war tax on the readers or publishers of technical magazines. It is clearly evident now that the repeal of this law is imperative for the good of all.

Technical or business information such as the upstanding men of America need today is not found in every local print. The great value of the technical prints to merchants, doctors, lawyers, engineers, architects, machinists and other skilled persons is threatened with restriction, if not absolute deprivation, the minute they are made more costly or harder to get by mail.

The government would not have the young engineer, just out of college and on his first job on some big construction work in a remote corner of the West forced to pay a heavy tax if he is to receive regularly the great engineering magazines which keep him a student, interested and ambitious to know the best ways of overcoming the thousands of obstacles with which nature continually confronts the engineer. The government would not deny to the old engineer this record of the modern things which are gathered through national facilities and accurately published to help make big men and keep them big.

The government would not deny the machinist, crowded with his day's work in the great factory, the right and privilege in his home at night of learning through the magazines devoted to his field better, more efficient, more economical and less dangerous ways of doing his important day's work. The government would not have the motor mechanic depend on the brains of the single shop in which he works for new ideas. It would not want him in time to become a single-cylinder man in a race with 12-cylinder competition. Yet he must risk this fate or pay this postage tax on intelligence in case he lives in a far-away zone from the one in which his favorite journal—the one he understands, the one that gives him the most of what he needs and does it in the clearest way—is published. The government would not deprive a man of his necessary information about his motor car, but such a terrific tax will mean there will be hundreds of thousands less readers of motor publications throughout the country.

The reader's tax would be regulated wholly by the distance his store or home happens to be from the publication office. Inequality of opportunity appears in the zone postage plan, which is too palpably a perversion of democratic institutions to last. Help repeal it.

There is opportunity to do something to correct this matter at once. Fill out and send the blank printed in this issue in the advertising section.

**H. J. Guthrie, Manager of the Veedol Department, Established by the Tidewater Oil Co.**

## TIDEWATER OIL CO. UNIFIES ORGANIZATION.

The Tidewater Oil Co. has established a Veedol department under the management of H. J. Guthrie, 11 Broadway, New York, to distribute its products. Mr. Guthrie was formerly president of the Platt & Washburn Refining Co., now dissolved, which has been owned by the Tidewater Oil Co. for 29 years, although conducted as a separate company, and which has hitherto carried on the business of selling these products. The Tidewater Oil Co. manufactures Veedol oils and greases. Tydol gasoline and other specially refined petroleum products.

The refinery at Bayonne, N. J., covers 1½ miles of docking space and its equipment includes 500 oil tanks, with a capacity of 1,500,000 barrels; an industrial railway eight miles long, box, barrel and can factories, stills, filters, power, pumping and refrigerating plants and special laboratories. The Tidewater Oil Co. was the first to pipe crude oil from wells hundreds of miles away from the seaboard.

## JONES MOTOR CAR CO. WILL MAKE TRUCK.

The Jones Motor Car Co., Wichita, Kan., which manufactures the Jones line of passenger cars, has started production on a one-ton truck, which will sell for $1100. This model will be on the market early in February according to announcement by President J. J. Jones, who also announces the production of a two-ton model, which will be marketed about March 1.

The one-ton model is equipped with a model N, Continental, four-cylinder, 3¾x5 engine. The ignition is of the high-tension type and a vertical tube radiator is used with circulation by positive gear driven centrifugal pump and fan mounted on motor.

The front springs are 44 inches long and two inches wide, with nine leaves, and the rear springs are 52 inches long, three inches wide, with 10 leaves. Solid tires are used, 34x3½ in front and 34x4 rear. The chassis has a wheelbase of 130 inches and weighs 2750 pounds.

The production schedule for the current year calls for 2000 trucks.

## SHOPE ZENITH SALES AND ADVERTISING MANAGER.

V. I. Shope, formerly manager of the Zenith Carburetor Co.'s branch in New York City, has been made sales and advertising manager, to succeed A. H. Doolittle, who has resigned to take a vacation before beginning active work again.

Mr. Doolittle, who has been with the Zenith company in the same capacity for the past three years, is well known in the motor car industry, having at one time been with the Pope-Hartford and Electric Vehicle Co., later served as advertising manager for the Knox Automobile Co. He held a similar position with the Continental Motor and later established his own advertising agency, giving it up to go with the Zenith company.

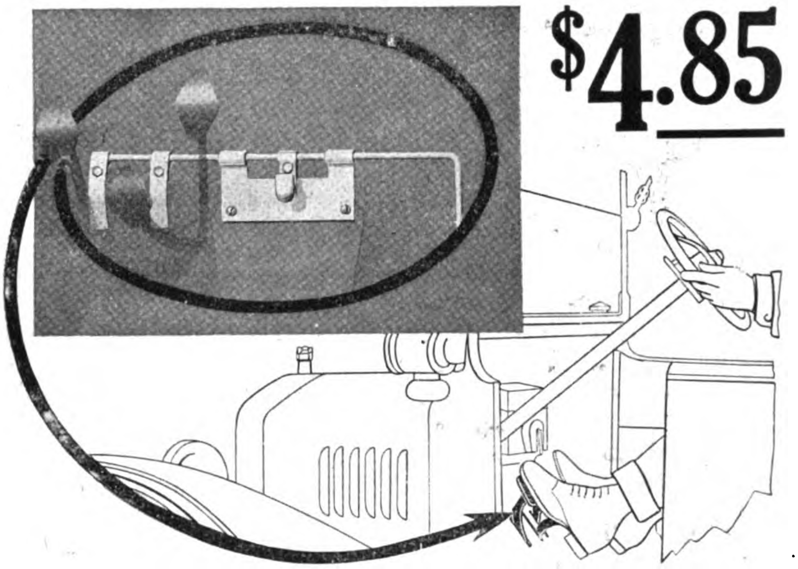
# Speederator A Mechanical Miracle

**Speederator is a wonderful device.**

**It automatically controls the engine speed and makes a Ford act like a six.**

**It absolutely prevents stalling, bucking and engine racing.**

**Stock it at once to care for the demand created by our national advertising.**



**$4.85**

## SPEEDERATOR

***Makes Your Ford Act Like a Six***

### Money back if Buyer is not Satisfied

Speederator is sold on a positive money back guarantee.

If the buyer is not absolutely satisfied he gets his money back without argument any time within 30 days.

There are no strings to this money-back proposition.

We back the dealer all the way in this offer.

### Foot Pedals Work Speederator

The driver don't have to learn to use the Speederator.

He simply works the Ford foot pedals as he always has.

You don't have to touch the hand throttle.

Speederator connects with the carburetor and automatically regulates the speed to the load.

### Ford Officials Use Speederator

Officials of the Ford Motor Company use Speederator on their personal cars.

They give this wonderful device the highest praise.

So do thousands of motorists who have had Speederator installed on their cars within the past year.

We have never had a kick from a Speederator user.

### Put It On In 20 Minutes

Anyone can put Speederator on a Ford in 20 minutes.

A screw driver and a pair of pliers are all the tools needed.

It is out of sight under the foot board. You don't have to bore a hole.

Speederator is wonderfully simple, but it is a mechanical miracle in what it does to help Ford performance.

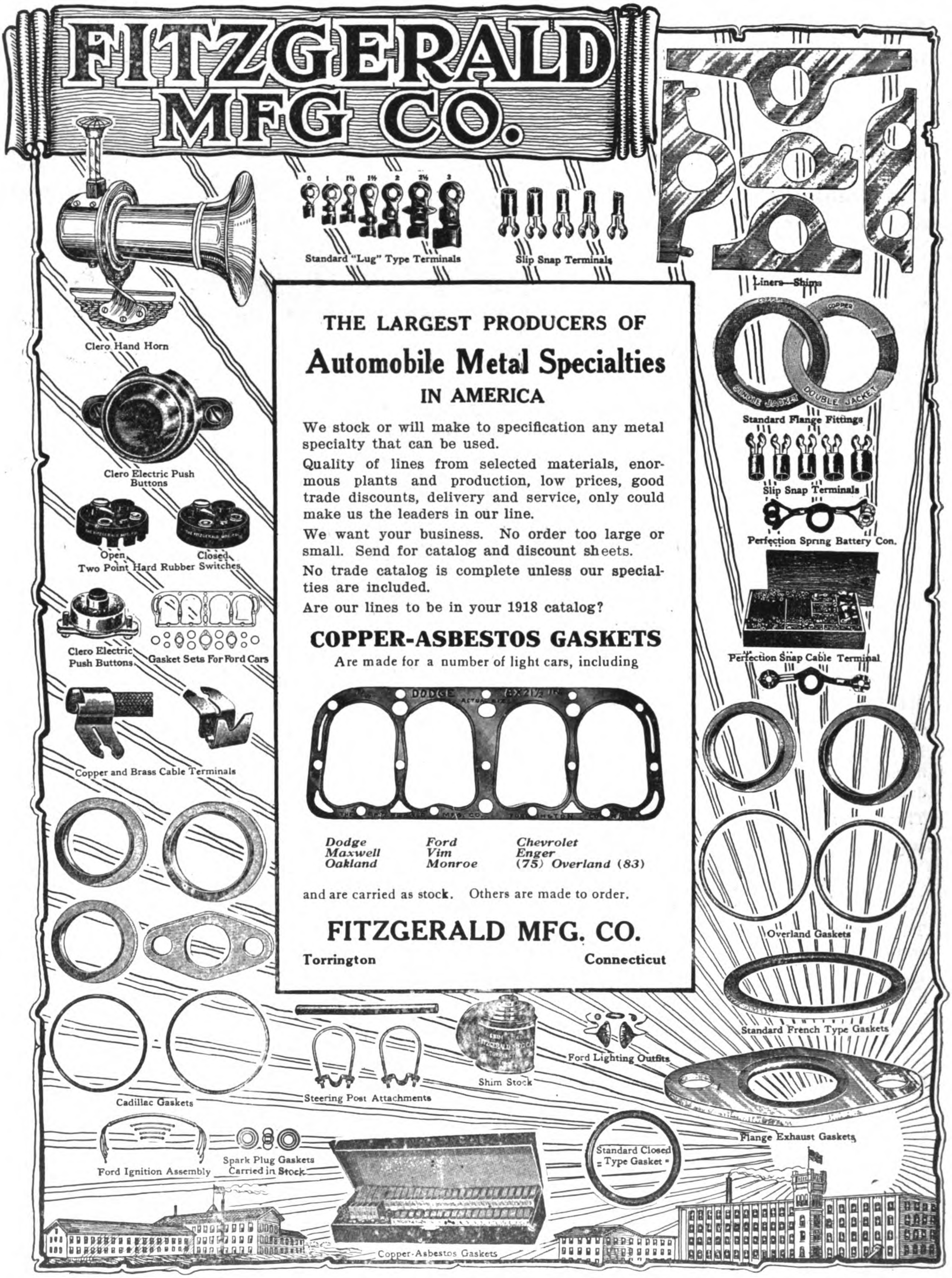
***Order from your jobber today, or write us direct.***
***It will be a big money maker in 1918.***

VERSAL PRODUCTS

**Versal Products Manufacturing Company**
Formerly The Detroit Starter Company
DETROIT, MICHIGAN

VERSAL PRODUCTS

(When Writing to Advertisers, Please Mention the Accessory and Garage Journal.)


FITZGERALD MFG CO.
0 1 1¼ 1½ 2 2½ 3
Standard "Lug" Type Terminals
Slip Snap Terminals
Liners—Shims
Clero Hand Horn
Clero Electric Push Buttons
Open
Closed
Two Point Hard Rubber Switches
Clero Electric Push Buttons
Gasket Sets For Ford Cars
Copper and Brass Cable Terminals
COPPER SINGLE JACKET
COPPER DOUBLE JACKET
Standard Flange Fittings
Slip Snap Terminals
Perfection Spring Battery Con.
Perfection Snap Cable Terminal
Overland Gaskets
Standard French Type Gaskets
Cadillac Gaskets
Steering Post Attachments
Shim Stock
Ford Lighting Outfits
Flange Exhaust Gaskets
Ford Ignition Assembly
Spark Plug Gaskets Carried in Stock
Standard Closed Type Gasket
Copper-Asbestos Gaskets

### THE LARGEST PRODUCERS OF

## Automobile Metal Specialties

### IN AMERICA

We stock or will make to specification any metal specialty that can be used.

Quality of lines from selected materials, enormous plants and production, low prices, good trade discounts, delivery and service, only could make us the leaders in our line.

We want your business. No order too large or small. Send for catalog and discount sheets.

No trade catalog is complete unless our specialties are included.

Are our lines to be in your 1918 catalog?

## COPPER-ASBESTOS GASKETS

Are made for a number of light cars, including

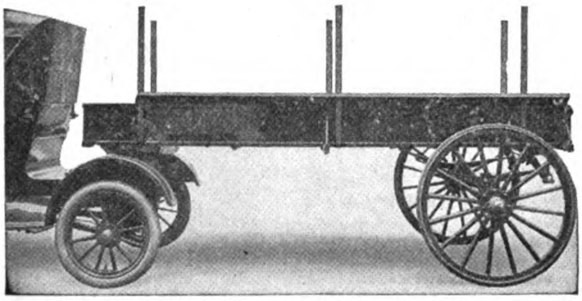
DODGE 3⅞X2½ IN.
ACTUAL SIZE

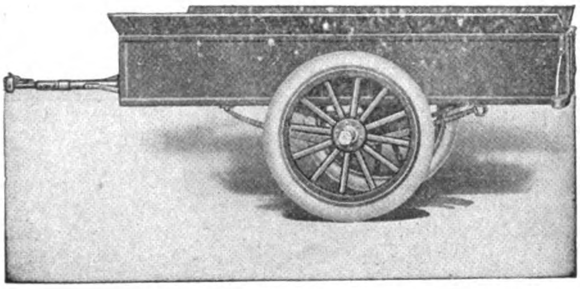
| | | |
|---|---|---|
| *Dodge* | *Ford* | *Chevrolet* |
| *Maxwell* | *Vim* | *Enger* |
| *Oakland* | *Monroe* | *(75) Overland (83)* |

and are carried as stock. Others are made to order.

## FITZGERALD MFG. CO.

**Torrington** **Connecticut**





# Haul a 3000-lb. Load With Your Ford Car

A Ford runabout equipped with a Rocking Fifth Wheel, will have light truck capacity when used with **STOCKBRIDGE** 2000 or 3000 pound semi-trailers, and by uncoupling the body, which can be done in a very few minutes, the machine has all the utility of the pleasure car.

**STOCKBRIDGE Semi-Trailers** are the most practical equipment built. They are designed for truck service. They are operated with Ford economy. They can be coupled or uncoupled by any driver without help. The Rocking Fifth Wheel is easily removed. No time is lost. Simply remove six bolts. The owner has a car or a unit with truck capacity and makes no sacrifice of the qualities of either type of vehicle.

The car and semi-trailer can make 20 miles an hour on good roads and can climb any travelled grade.

**STOCKBRIDGE Semi-Trailers** are constructed for truck service. The bodies are express type, with flareboards or flareboards and stakes. The brief specifications are:

| | **2000 Pounds** | **3000 Pounds** |
|---|---|---|
| **AXLE** | **1 5-8 in. square, Timken roller bearings.** | |
| **SPRINGS** | **Platform type, 1 3-4 in. wide** | **Platform type, 2 in. wide** |
| **WHEELS** | **46 in. outside diameter, artillery type hubs, 1 5-8 in. spokes** | |
| **TIRES** | **Solid rubber, 1 3-4 in. flat top. side wire** | **2 in. flat top. side wire** |
| **EQUIPMENT** | **Complete Rocking Fifth Wheel ready for attaching** | |
| **PRICES** | **$195, f. o. b. Springfield, Mass.** | **$225 f. o. b. Springfield, Mass.** |

**SPRINGFIELD TRAILER,** 800 pounds capacity, express body, semi-elliptic springs, 1 1-4 in. axle, ball bearings, 12-spoke automobile wheels, 30x3 in. pneumatic tires, price **$105,** f. o. b. Springfield.

**STOCKBRIDGE BODY COMPANY,** 130-6 UNION STREET
SPRINGFIELD, MASSACHUSETTS

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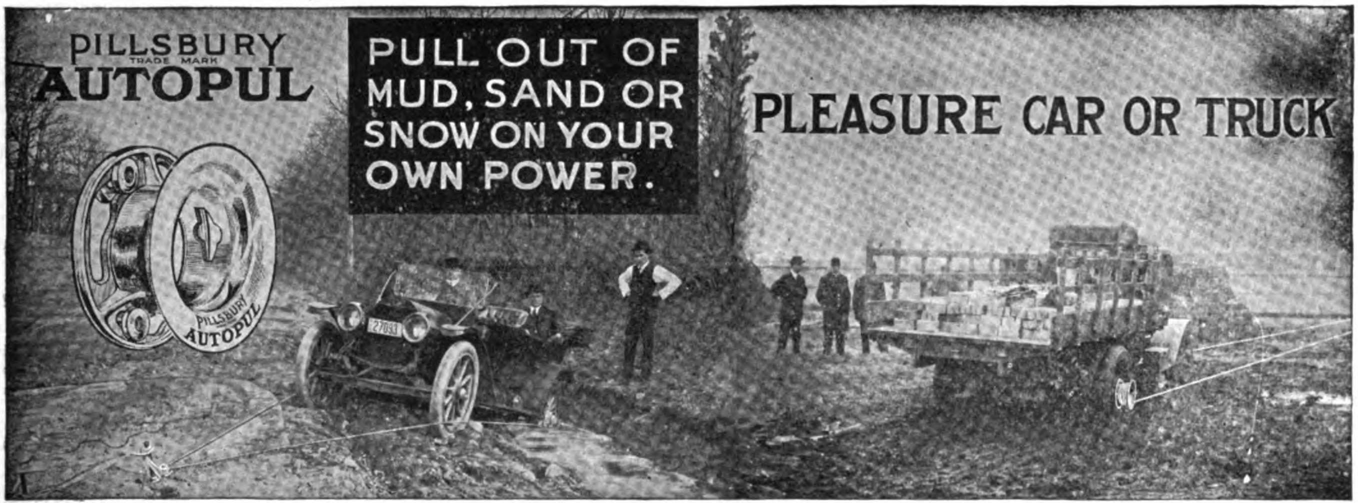


# All Highways are Passable—With a PILLSBURY AUTOPUL

**An equipment, either permanent or quickly fitted to any car or truck, with which a ditched or bogged or tractionless vehicle can be drawn to a solid surface.**

**The outfit can be carried constantly, requires but small space and is very light. Machines can be drawn forward or back as is necessary by their own power.**

*LIST PRICE, COMPLETE FITTINGS*

| | |
|---|---|
| **Automobile Size, Japanned** | **$8** |
| **Automobile Size, Nickeled** | **$13** |
| **Truck Size, Japanned** | **$8 to $35** |

**Indispensable for any truck, an ideal touring equipment, PILLSBURY AUTOPUL is a practical utility and an economy.**

**It consists of two winding drums, two special cable hooks and locking bolts and nuts. Stakes and cable furnished as extras, the cable or rope in lengths to meet any requirement.**

**PILLSBURY HUBPUL** **For Ford and model 490 Chevrolet cars—a combination Hup-Cap, Wheel Puller and Auto Capstan, consisting of two hub drums, two spoke hooks and wheel puller cap screw.**

| | |
|---|---|
| **Complete Set, Japanned** | **$4** |
| **Complete Set, Nickeled** | **$6** |

*All quotations f. o. b. Minneapolis, Minn.*

*DEALERS AND JOBBERS: We have a big sales proposition for you. Write for it today.*

**PILLSBURY MANUFACTURING COMPANY, Minneapolis, Minn.**

"NORMA"

BALL BEARINGS

(Patented)

The "best" car—the "best" truck—the "best" engine—they may all be condemned, may be rendered useless, by ignition or lighting apparatus which fails to measure up to their standards of quality. A good car, a good truck, must be consistently good—good in every minute detail, serviceable in every feature which makes for serviceability.

**The standardization of all high-grade magnetos and lighting generators on "NORMA" Ball Bearings is an example of engineering consistency. The makers of these accessories, seeking maximum serviceability in their product, have availed themselves of the proved "NORMA" serviceability.**

**Be *Sure*—See That Your Electrical Accessories Are "NORMA" Equipped**

**THE NORMA COMPANY OF AMERICA**
**1790 BROADWAY NEW YORK**

**Ball, Roller, Thrust and Combination Bearings.**

## INDEX TO ADVERTISERS

Page
A. B. C. Starter Co ..... 64
Adamson Mfg. Co ..... 64
Advance Auto Accessories Corp ..... 7
American Bureau of Engineering, Inc ..... 66
American Technical Society ..... 61
Apperson Automobile Co ..... 55
Atwater Kent Sales Co ..... 57
Aucock, Herbert ..... 57
Auglaize Motor Car Co ..... 58
Auto Exchange ..... 57
Auto Parts Co ..... 56
Auto Salvage Co., Inc ..... 57
Auto Wrecking Co ..... 56

Bacon Service Co ..... 68
Ballman-Whitten Mfg. Co ..... 63
Bearings Service Co ..... 6
Belcher Engineering Co ..... 57
Bilodeau Ball Bearing Works ..... 63
Boston Auto Parts Co ..... 56
Boston Block 702 A ..... 57
Boulevard Motor Co ..... 57
Bowser & Co., Inc., S. F ..... 55
Box 31 ..... 57
Brown, Walter H ..... 57
Brunner Mfg. Co ..... 4

Champion Ignition Co ..... B
Chase & Co., L. C ..... Cover
Combination Auto Lock Co ..... 63
Continental Auto Parts Co ..... 62
Corning Glass Works ..... 8
Corp Brothers ..... 56
Curtis Pneumatic Machinery Co ..... 3

Detroit Battery Co ..... 62
Detroit Magneto Exchange ..... 56
Dixon Crucible Co., Jos ..... 68
Dyer Co., G. H ..... A
Dyneto Electric Corp ..... 5

Eby, Henry E., Jr ..... 57

Faw, Inc., J. H ..... 65

Fitzgerald Mfg. Co ..... 52

Garford Motor Truck Co ..... D
Gibson-Hollister Mfg. Co ..... 60
Gleason, John L ..... 66
Greenfield Tap and Die Corp ..... 67

Harvey Spring & Forging Co ..... C
Heinze Co., John O ..... 62
Hughes & Co., D. C ..... 63

Imperial Brass Mfg. Co ..... 55
Imperial Oil Co ..... 59
International Lubricants Co ..... 65
International Metal Polish Co ..... 61
International Motor Products Co ..... 58

Jefferson Electric Mfg. Co ..... 58
Jenkins Vulcan Spring Co ..... 60

K. B. C. Company ..... 63
Kennedy Car Liner and Bag Co ..... 68

La Fayette Engineering Co ..... 62
Lenthe, D ..... 57

Mabey's Electric and Mfg. Co ..... 55
Manufacturers Glass Co ..... 57
Manufacturer 910 ..... 57
Martin Mfg. Co ..... 66
Maxwell Bros ..... 56
Michigan Auto Products Co., Inc ..... 59
Mossberg Co., Frank ..... Cover
Motor Specialties Co ..... 64
Motorists Accessories Co ..... 57
Mueller & Co., R. S ..... 60

New Departure Mfg. Co ..... 68
New Era Spring and Specialty Co ..... 68
Niehoff & Co., Inc., Paul G ..... 66
Norma Co. of America ..... 54

## INDEX TO ADVERTISERS

(Continued)

Page
Pan Motor Co....68
Pierce Governor Co....60
Piston Ring Co....67
Pillsbury Mfg. Co....53
Prest-O-Lite Co., Inc....66
Puritan Machine Co....57

Rosenfield & Co., James....57
Ross-Gould List and Letter Co....60

Scaife, Wm. B. & Sons Co....66
Schrader's Son, Inc., A....58
Service Gear and Machine Co....56
Shaler Co., C. A....1-9
Specialty Mfg. Co....56
Starrett Co., L. S....10
Stockbridge Body Co....53
Sullivan Motor Car Co....60

Tire Outlet Co., Inc....57

United Engine & Mfg. Co....66
United States Air Compressor Co....64
United States Motor Truck Co....2

Vanderpool Co....63
Versal Products Mfg. Co....51

Walden-Worcester, Inc....Cover
Weston Electrical Instrument Co....60
Williams Foundry and Machine Co....66
Wisconsin Auto Top Co....Cover
Witte Engine Works....62

Gasoline
CHIEF SENTRY
GASOLINE

Get a New Start

Make 1918 a year of success and accomplishment.

Equip your garage with the Bowser Gasoline Storage System; serve your old trade better and meet new people who will soon become permanent customers.

Avoid the waste, inconvenience and bother which has always been a drawback to your business.

BOWSER ESTABLISHED 1885

OIL and GASOLINE STORAGE SYSTEMS

Are designed and built for any requirements; you can obtain the exact equipment adapted to your needs.

Built of selected materials by expert workmen, they will last for many "New Years" to come.

Write for complete information

S. F. BOWSER & CO., Inc.
Ft. Wayne, Indiana, U. S. A.
Sales Offices in All Centers
Representatives Everywhere

ELECTRIC GLUE POT

Mabey's Dry Heat Electric Glue Pot

No flame; no soot or smoke. All danger of fire is eliminated

| Capacity | Price without cover |
|---|---|
| 1 qt. | $ 9.50 |
| 2 qts. | 11.00 |
| 3 qts. | 12.75 |
| 4 qts. | 15.75 |

Century Automobile Cigar Lighter, Complete $1.00 Each, F. O. B. Indianapolis.

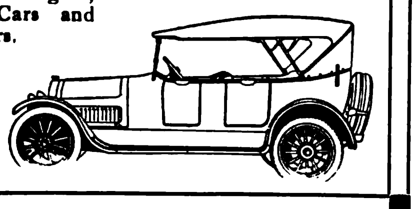
DEALERS—Write For Prices.

MABEY'S ELECTRIC & MFG. CO.
968 Ft. Wayne Avenue INDIANAPOLIS, IND.

APPERSON EIGHT

Over 80 Parts Have Been Eliminated from engine—the simplest built, producing from 48 to 56 H. P. 6,000 to 12,000 tire mileage. Lowest cost of upkeep. Ask your dealer to explain and demonstrate Eights, Sixes, Touring Cars and "Chummy" Roadsters.

APPERSON AUTOMOBILE CO.
Kokomo Indiana



Imperial Primer

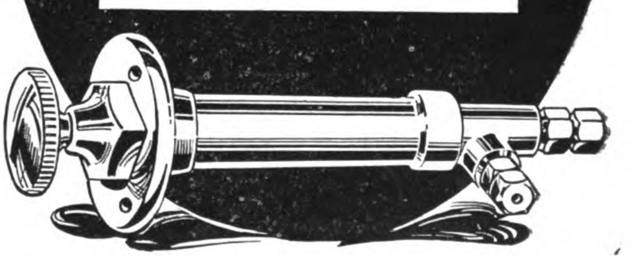
A Profit-Line for Winter

Motorists everywhere are looking up the live dealers and investing in the IMPERIAL PRIMER, the one device that Makes Cold Weather Starting Easy.

Easily and quickly installed on any make of car. Price $6.00 complete.

Write today for our proposition.

IMPERIAL BRASS MFG. CO.
517 S. Racine Ave., CHICAGO, ILL



# TRADE OUTLET

## HERE YOU SAVE

## 50% to 75%

## ON REPAIR PARTS

**Our immense volume makes this saving possible. Only the best Parts offered backed by our iron clad GUARANTEE of "Complete Satisfaction or Money Cheerfully Refunded." Save this list for future reference. Many excellent BARGAINS.**

## GUARANTEED MOTORS

| | | | |
|---|---|---|---|
| Regal 30 | $30.00 | Overland 69 | $75.00 |
| Flanders 20 | 50.00 | Overland 71 | 75.00 |
| E. M. F. 30 | 50.00 | Overland 79 | 75.00 |
| Rambler Model 64 | 50.00 | Overland 83 | 75.00 |
| Partin-Palmer | 50.00 | Case 1911 | 75.00 |
| Maxwell 25 | 60.00 | Stearns 1911 | 75.00 |
| Cadillac 09-10 | 60.00 | Moon 1912 | 75.00 |
| Cadillac 1912 | 75.00 | Velie 40, 1912 | 85.00 |
| Speedwell 40 hp. | 75.00 | Buick 17 | 90.00 |
| Chalmers 6, 1915 | 100.00 | Mitchell 6-60 | 100.00 |
| Drummond 8, 1917 | 200.00 | Packard 30 | 150.00 |

| | |
|---|---|
| Velie 4 cyl., 1915, starter and generator | $150.00 |
| Apperson 8 cyl., starter | 200.00 |
| Jackson 35, Unit Plant | 75.00 |
| Chalmers Mod. 10, Unit Plant | 125.00 |
| Menominee Truck, Unit Plant | 100.00 |
| King 1914, Unit Plant | 125.00 |
| Cadillac 8 cyl., Unit Plant | 300.00 |

## ALL MOTORS GUARANTEED IN EXCELLENT CONDITION

| | | |
|---|---|---|
| Rear Axles | $15.00 | $75.00 |
| Transmissions | 25.00 | 50.00 |
| Front Axles | 5.00 | 10.00 |
| Carburetors | 3.00 | 15.00 |
| Radiators | 10.00 | 25.00 |
| Springs | 1.50 | 2.50 |
| Spring Leaves | .25 | .50 |
| Bearings, any make | .50 | 5.00 |
| Ward & Leonard Generators | .... | 15.00 |
| Gray & Davis Generator with cut out | .... | 20.00 |
| Splitdorf Mag. & Coil | .... | 10.00 |
| Remy Mag. & Coil | .... | 10.00 |
| Bosch N U 4 | .... | 20.00 |
| Bosch D U 4 set spark | .... | 25.00 |
| Bosch D R 4 | .... | 25.00 |
| Bosch D U 4—variable spark | .... | 30.00 |
| Bosch Z R 4 | .... | 35.00 |
| Bosch D 6 | .... | 25.00 |
| Bosch D U 6—D R 6 | .... | 35.00 |
| Splitdorf Dixie | .... | 20.00 |
| Mea H. T. Mak | .... | 25.00 |
| Eisemann. H. T | .... | 35.00 |
| Simms H. T | .... | 20.00 |
| Splitdorf Coils | 5.00 | 7.50 |
| Remy Coils | 5.00 | 7.50 |
| Bosch Coils | .... | 7.50 |
| Windshields | 6.00 | 10.00 |
| Electric Head Lamps, Pair | .... | 5.00 |
| Gas Head Lamps, Pair | .... | 4.00 |
| Oil Side Lamps for Ford, Pr. | .... | 2.00 |
| Electric Side Lamp, Pair | .... | 3.00 |
| Oil Side Lamps, Pair | .... | 3.00 |
| Spot Lights with Mirror | .... | 3.50 |
| Round Gas Tanks, 12 Gal | .... | 1.50 |
| Round Gas Tank, 12x35, for Vacuum | .... | 6.00 |
| Carter Gravity Tank | .... | 4.00 |
| Stewart Vacuum Tank | .... | 7.50 |
| Tube Vulcanizer | .... | .50 |
| Foot Pumps | 1.50 | 2.50 |
| Spark Plugs | .25 | .50 |
| Reliners 30x3—30x3½ | .... | .75 |
| Reliners 32x3½—32x4 | .... | 1.00 |
| Reliners 33x4 and larger | .... | 1.50 |
| Blow out patches inside | .... | .20 |
| Blow out patches outside | .... | .35 |

***Instant Service!***
***Write, Wire or Phone—***

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*"We Tear 'Em up and Sell the Pieces"*

**13th and Oak Kansas City, Mo.**

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**SELL THEM ALL ON**

## AUTO PARTS

**FOR ALL MODELS AND MAKES OF AUTOMOBILES**

**Get Our Prices Before You Buy and SAVE MONEY.**

We guarantee all articles bought from us to prove satisfactory. If not return them and we will refund money.

**WE HAVE**

a great stock of complete rear axles, complete motors, transmissions, transmission cases, crank cases, crank shafts, disc clutches, transmission gears, bearings, axle shafts, cylinders, cam shafts, radiators, connecting rods, magnetos, coils, carburetors, wheels, hubs, rims, springs, etc., at 50 to 75 per cent. off the manufacturers' list price.

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To be certain of perfect results always use genuine SUPERIOR repair parts for all makes of ignition devices and SUPERIOR brushes for every type of starting-lighting system. These are made of the very finest grade of materials, guaranteed to fit perfectly and sold with the understanding that the full purchase price will be refunded for any part which does not give entire satisfaction in every way. There are absolutely no alloys or composition metals used in any of our SUPERIOR parts. "They last longer, but cost less." Prices are right and the discount liberal. Immediate deliveries. Write for catalog, it will pay you.

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## SAVE AT LEAST 50%

We have in stock at all times parts for Stearns, Stevens-Duryeas, Flanders, Maxwells, E. M. F., Buicks, Mitchells, Speedwells, Herreshoffs, Hudsons, Elmores, Pope Hartfords and Franklin 6s.

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Out of city orders given prompt and careful attention.

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We Carry the Largest Stock of

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We furnish parts at a saving of

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If you're in a hurry just take your parts book of your car and deduct one-half of the price in there and write, wire or 'phone us the order. We will ship parts the same day your order is received. Special discounts to dealers.

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We have just received a shipment containing EIGHT TONS of GEARS for all standard makes of cars. Send us your old gears and let us match them.

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Every garage and repair man should have our new catalogue.

**THE HOUSE RELIABLE.**

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|---|---|
| Bosch Du-4 Variable spark | $30.00 |
| Bosch Du-4 set spark | 25.00 |
| Bosch D4 and Dr4 | 25.00 |
| Bosch D6 and Dr6 | 30.00 |
| Splitdorf 4 cyl. Dixie, high tension | 25.00 |
| Splitdorf 4 cyl., Models A, T, X and D | 10.00 |
| National 4 cyl. low tension | 8.00 |
| Briggs 4 cyl. low tension | 8.00 |
| Remy 4 cyl., type R L | 15.00 |
| Simms SU4 high tension | 22.00 |

**GENERATORS.**

| | |
|---|---|
| Deaco 6 volt | $12.00 |
| Auto Lite 6 volt | 15.00 |

**COILS.**

| | |
|---|---|
| Splitdorf T S type | $10.00 |
| Splitdorf box type | 6.00 |
| Bosch type A | 12.00 |
| Remy box coils | 6.00 |
| Remy type LC and LE | 8.00 |
| Briggs box coils | 6.00 |

**PREST-O-LITE TANKS.**

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| Model B., fully charged | $8.00 |
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WE REPAIR any make magneto, coil, lighting generator or starter and give 24 hour service. Member Detroit Automobile Trade Association.

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**Write our Sales Department About Your Requirements.**

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Parts for any Automobile at a saving of 50% to 80%. Our three great plants cover every state in the Union, and we are therefore in better position to fill your orders.

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### For Starting Systems

We make a specialty of supplying to service stations and repair shops, steel ring gears for installation in the place of iron or broken cast iron gears cut in the flywheel.

Customers will pay extra for a gear guaranteed against breakage.

Send for prices of ring gears for any model or make of car using Bendix or sliding gears.

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Correspondence solicited.

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In any condition and any quantity. Paying the highest market prices. Get our prices before selling. Phone Chelsea, 51460.

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It prevents loss of use of car and loss of time resulting from laying up of car.

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All sizes. Oversize Pistons, Rings, Etc.
Fords ........................... $15.00
Croft Electric Lighting Outfits for Ford Cars. Agents Wanted.

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SALESMAN calling on power plants and garages to handle Asbestos Packings of superior quality; exceptional chance to increase your income; liberal commission. Manufacturer 910, Havemeyer Bldg., New York City.

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BOSCH MAGNETOS; all models; Eisemann, Splitdorf and Remy Magnetos always on hand. Price list sent. D. Lenthe, Ordway Bld., Newark, N. J.

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Beautiful streamline brand new touring and roadster bodies, upholstered, painted and complete with cushions; can be easily made to fit Fords, Hudson 20, Chevrolet 490, Monroe, Dort and other light cars.

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| Roadster | $30.00 |
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($5.00 extra for crating.)

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Quick repairs on all makes of Starters, Magnetos, Generators, Coils, etc. Send us your work for an estimate.

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All guaranteed in first class condition electrically and mechanically.

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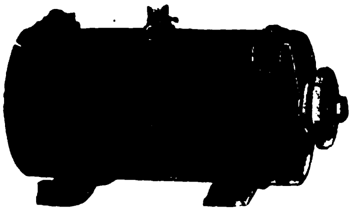
Established in 1910.



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**JEFFERSON 6 and 12 VOLT BATTERY IGNITION COILS**

although few in number are interchangeable with any style of coil used with Standard Battery Ignition.

These coils are particularly noticeable because of their workmanship, flexibility, simple construction and completeness of detail.

A coil for every requirement in the ignition field.

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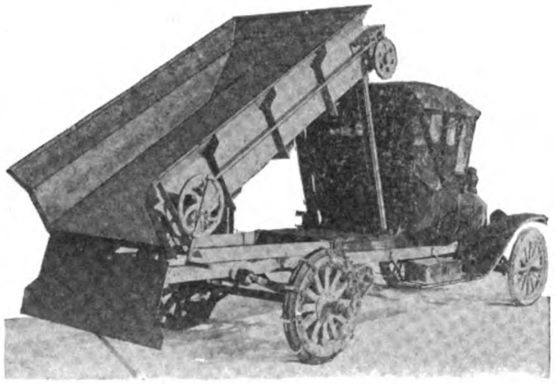

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**Speedy, Powerful, Light in Weight and very Efficient**

Price $206.25 for body and hoist complete ready to mount on chassis frame.
Bodies two sizes, capacity in pounds the same.
Size of the one cu. yd. body 96x44x12 in., straight sides only. Carrying capacity from 2700 to 3000 pounds of gravel, sand or crushed stone.
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The retail price of either outfit is $206.25.
Approximate weight of either body is 550 pounds.
Builders of Hoists ranging in capacity from one to five tons.

***Ask for dealer's proposition***

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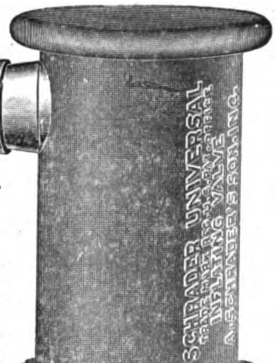
**COSTS MONEY**

**when** the customers for **whose** convenience you provide an air station forget to **turn** off the flow after they **have** filled their tires.



**Guard against this waste by attaching a**

**Schrader Automatic Inflating Valve**

**to your air hose.**

**Thanks to this appliance your bottled air locks itself into the tank the minute it is taken off the tire-valve. You turn on the air by pressing the nozzle of the inflating valve against the tire-valve and you turn it off by removing the device from the tire-valve.**

**Made to fit any diameter of hose from ¼ in. to ⅝ in.**

**PRICE $1.25**
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***Manufactured by***

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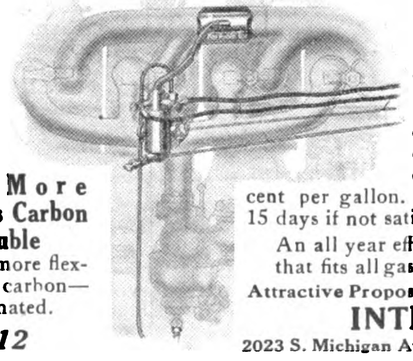
**Instant Heating Unit That Eliminates Cold Weather Troubles.**

A combination Heating Unit comprising Moistener, Electric Super-Heater Primer, Exhaust Super-Heater and Accelerator.

**More Power — More Mileage — Less Carbon —Less Trouble**

A smoother and more flexible engine with carbon—Practically Eliminated.

***Price $12***



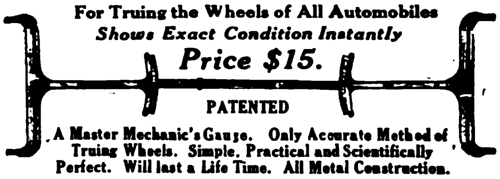
Starts a cold engine instantly. Increased satisfaction in the operation of your car with a saving of 25 to 60 per cent per gallon. Money back in 15 days if not satisfactory.

An all year efficiency device that fits all gasoline engines.

Attractive Proposition for Dealers.

**Perfection Wheel Truing Gauge**

**For Truing the Wheels of All Automobiles**
***Shows Exact Condition Instantly***



**A Master Mechanic's Gauge. Only Accurate Method of Truing Wheels. Simple. Practical and Scientifically Perfect. Will last a Life Time. All Metal Construction.**

***Save Your Tires***

Keep Your Wheels in Alignment.

A Real Service for Car Owners, Fleet Owners, Repair Men, Garages, Tire Representatives and Dealers. Can be Used on Any Automobile—Anywhere.

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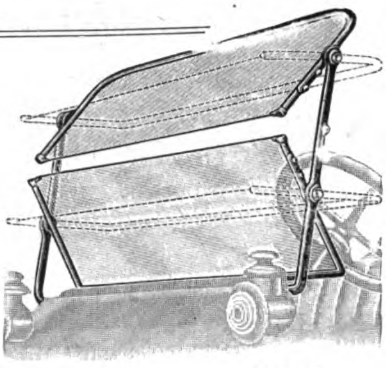
# Investigate This Complete Line of FORD Equipment

Jobbers and dealers can profit substantially on our enlarged line of Ford features this year.

In addition to the well-known Ospeco products previously sold, we have broadened our line with a number of other articles all of which are necessities with the Ford driver desiring to gain the greatest pleasure, service and satisfaction from his car.

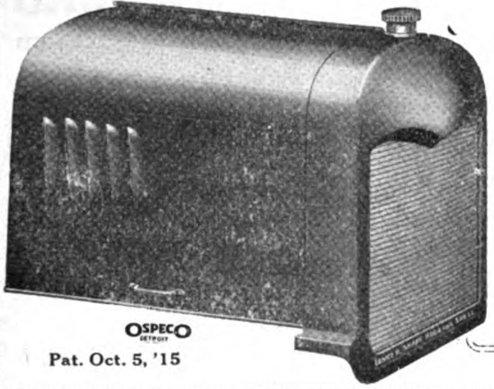


OSPECO
PAT. PEND.

**"Lawco" V-Shaped Hood and Shell**

**OSPECO DETROIT PRODUCTS**

**Ospeco-Built Ventilating Windshield**



OSPECO
DETROIT

Pat. Oct. 5, '15

At the top is shown the regular Ford Windshield made full ventilating, slanting and rain-vision by the addition of Ospeco parts. Adds safety in stormy weather, ventilates the front seat and keeps feet cool in summer.

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We also make the Ospeco Automatic Headlight Control, Irreversible Steering Unit, Fill-Thru-Sight-Gauge, Gasoline Gauge and Filler, Seikulator, etc.

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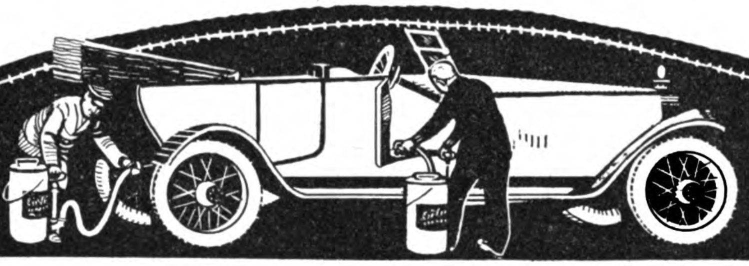

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***The Perfect Lubricant for Transmissions and Differentials***

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**WE OFFER YOU**

**FREE**

**One Self-Measuring Grease Cabinet with Order for Barrel or Half Barrel**

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**It saves time and labor in serving your customers.**

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| **1-2 Barrel, per lb.** | **$.16** |
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**Order through your Jobber or write us direct.**

**Takes the place of Heavy Transmission Oil**
**Takes the place of Transmission Greases**
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Use 50 to 75 per cent. less to start with and ride twice as far as before without replenishing.

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Majority of manufacturers are using this class of goods.

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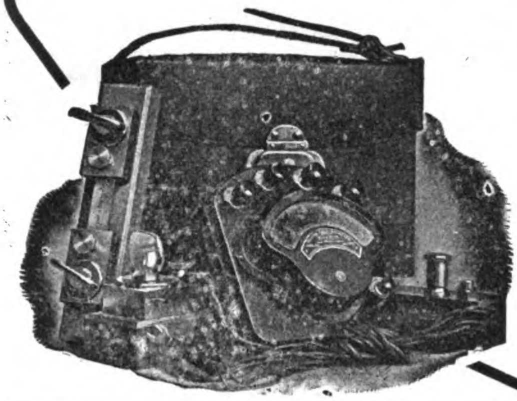

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If you can repair and adjust Electrical Starting and Lighting Equipment, you will get the cream of the garage business. With the increasing demand for this sort of service, you must equip to handle the business or lose it.

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Model 280
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Is the best, the most reliable, and therefore the cheapest electrical equipment for you. It enables you to determine promptly and accurately the condition of the electrical equipment of any automobile, just where the trouble is, and just how to remedy it. Write for our Special Proposition.

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They enable you to charge lighting and starting batteries without disconnecting them from the car.

Made of steel—lead plated—may be used over and over again.

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Sample mailed postpaid for 15c in stamps.
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One of the few staple and practical trucks on the market.

Our selling policy and proposition is the most liberal ever offered to the trade.

**One Model, 3,000 Lbs. Capacity**
**Chassis Price, $1,600**
***Write for complete details***

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**Rochester, New York**

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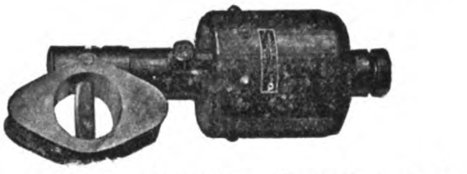

are a positive guarantee of motor truck efficiency, because they provide automatic speed control. Now standard equipment

**On 64 Makes of Motor Trucks**

No better proof of superiority could be offered.

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**NO MORE RUST!**

**The clean, non-rusting, non-corroding**
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**JUMBO SPARK PLUGS**

means absolute freedom from rust throughout the life of the plug. This new finish is a handsome gray which still further enhances the value of the world's super-plug.

**The 50 Cent Price**

makes Jumbo Spark Plugs the most profitable buy for dealer and driver.

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QUALITY
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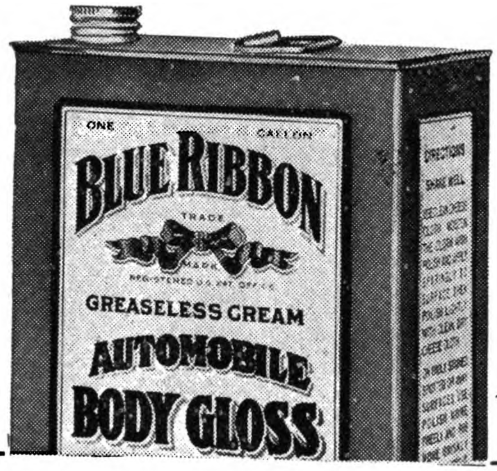

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No Grease to Catch Dust
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Best Furniture Polish Made
Use With Spray if Desired

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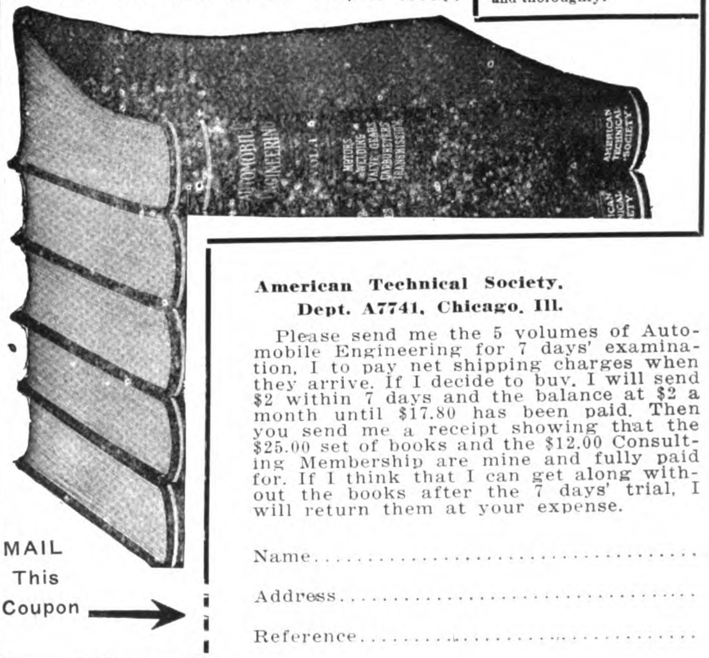

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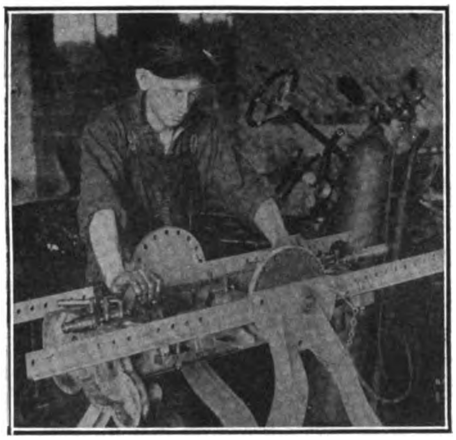

## Continental Motor Stand

USED AND RECOMMENDED BY

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*Tractor Manufacturers* — *Service Stations*
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*Wherever motors are built or repaired.*

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**CONTINENTAL AUTO PARTS CO.**

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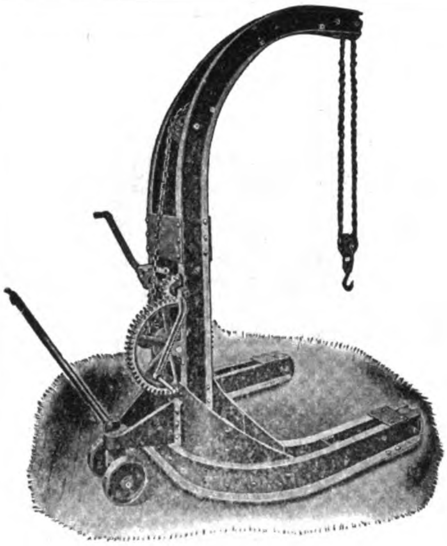

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Made of steel—it will not break. Double locked with load. Safe. Low base. Ample power. Roller bearings. No garage or repair shop can afford to be without them. A complete hoisting and conveying machine.

STANDARD SIZES

| No. | Height | Overhang | Capacity | Ht. of Base | Weight | List |
|---|---|---|---|---|---|---|
| 6 | 8′-6″ | 3′-6″ | 5000 lbs. | 8 inches | 900 lbs. | $100.00 |
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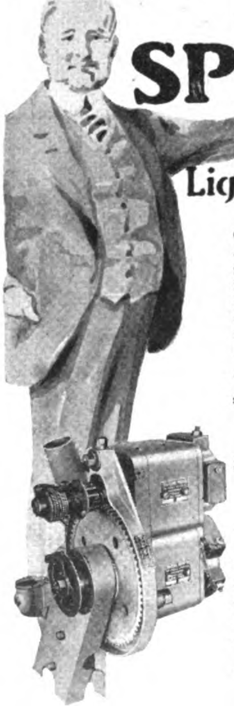
*because it leads in mechanism~*



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Cranking & Lighting System for *Fords*

Comparative statements from 353 Ford dealers prove more dealers are handling Heinze Springfield than any other one make of starter, and that dealers handling the Heinze Springfield with other makes sell far more Heinze-Springfields than any other kind. Comparison also quickly proves the Heinze-Springfield System the greatest value in its field. It is the only system for Fords selling for $85, complete with Ammeter, Dash Light, Tail Light, Dimmers and Lock.

The dealer arrangement is based on our conviction that the desirable dealer should realize worth while profits.

THE JOHN O. HEINZE COMPANY
SPRINGFIELD, OHIO, U. S. A.

**Real Points About the Heinze-Springfield System.**

1. A Two Unit, Six Volt, Single Wire Cranking and Lighting System Bendix Drive.
2. Nothing visible with hood closed.
3. No interference with engine accessibility.
4. Installed complete in four hours.
5. No power drain on motor.
6. Patented mounting plate and chain adjustment insures QUIETNESS. Prevents BROKEN CHAINS.
7. Highest QUALITY, most COMPACT, most CONVENIENT combination Dash Switch, Ammeter, and Dash Lamp.

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For every make and model of motor car carrying an electric starting system. Replacements on cars no longer manufactured can be had promptly.

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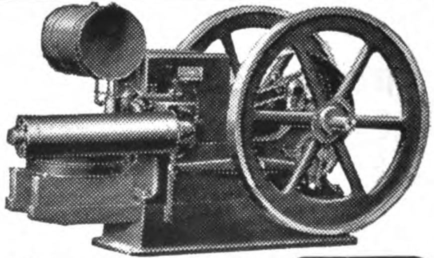

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2 to 22 H. P.—No waiting—Big factory—Big output—Prices most favorable. Write for my terms and prices on Garage Engines, Gasoline, Gas, Kerosene or Distillate. Get my new FREE Book, **"How to Judge Engines,"** before you buy any engine at any price.

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instead of gasoline in your Ford car or truck by equipping it with our Kerosene Carburetor and
**SAVES THREE-FOURTHS THE COST**
Coal oil gives 50 per cent more mileage and costs one-half the price of gasoline.
***30 DAYS' FREE TRIAL***
under our money-back guarantee. Send for circular today. Agents wanted everywhere,
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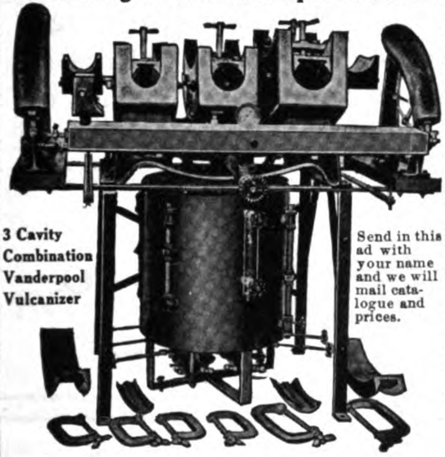
**Vulcanizing With a Vanderpool Vulcanizer Brings Big Profits**



3 Cavity Combination Vanderpool Vulcanizer

Send in this ad with your name and we will mail catalogue and prices.

Here is an exceptional opportunity for Garages as well as Vulcanizing Companies to secure a vulcanizer that will turn out high-grade work at a small cost. The fuel saved alone will pay for the machine in a short time—then you will "cash in" on your investment. This plant, the Vanderpool Vulcanizer, is meeting with enthusiastic approval of hundreds of satisfied users all over the country. Unsolicited testimonials from the various companies now using the "Vanderpool" testify to the dependability, efficiency and economy of this "Vulcanizing Wonder." One man writes that the first month's profits paid for the plant. No experience needed—we teach you how. It occupies very little floor space, and "once bought, you will never have to buy again."

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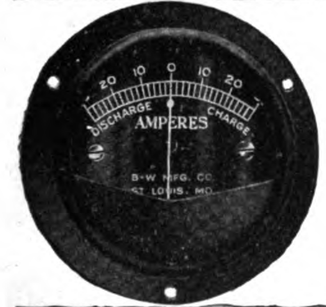

STURDILY CONSTRUCTED to retain accuracy under the most severe conditions. Handsome in appearance. Made in both flush and surface types. Finished in bright nickel or black rubberoid as desired.

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**Guaranteed Bearings**
We Exchange Rebuilt Bearings for old or worn ones
**BILODEAU** BALL BEARINGS WORKS

**THE SERVICE WE GIVE**

We save you time and money and guarantee the quality of the bearings sold. This service is quick and is developed to meet the needs of thousands of garages, service stations and repair shops.
We build bearings of all kinds, experiment and originate bearings for special uses.
Orders for new bearings of any type or size promptly filled.

**Send today for 1917 catalogue, listing types, sizes and prices of standard bearings. Trade discounts confidential.**

**BILODEAU BALL BEARING WORKS**
66 Stanhope Street, BOSTON, MASS.

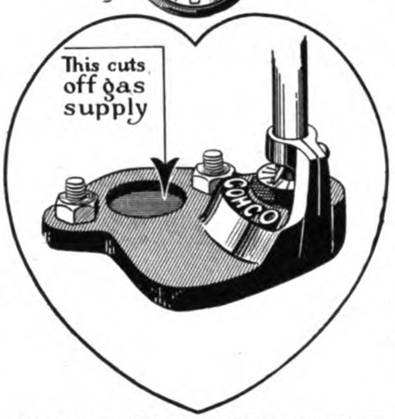
**COMCO AUTO LOCK**

**Locks the heart of the Automobile—the carburetor**

**250,000 Combinations 100% Theft Proof**

**Can be operated in the dark.**

**$10.00**


This cuts off gas supply
COMCO

***Jobbers and Dealers: Write today.***

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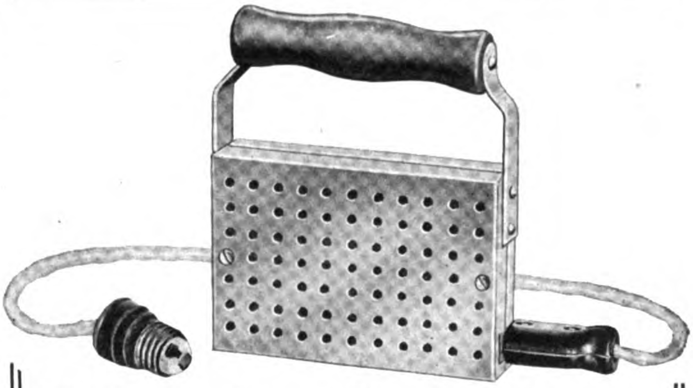
1130 Chestnut St. St. Louis



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TO GO UNDER THE HOOD
*Engines Kept Warm in Cold Garages or During Winter Parking*

Can be used in any car. Heat where you want it, in the coldest weather. Engine starts right off. Saves your starter. A slow heat all night at a nominal cost. Absolutely safe around gasoline. Heat well regulated.

No more frozen radiators or cranky cranks. No more hot water baths needed for the carburetor. No more priming or radiator draining nuisances. Just what everybody has been looking for.

10-Foot Cord and Plug Complete
**$3.00**
Liberal Discounts

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MANUFACTURERS
A Complete Line of Percolators, Toasters, Flat Irons, Stoves, Toy Ranges, Etc.
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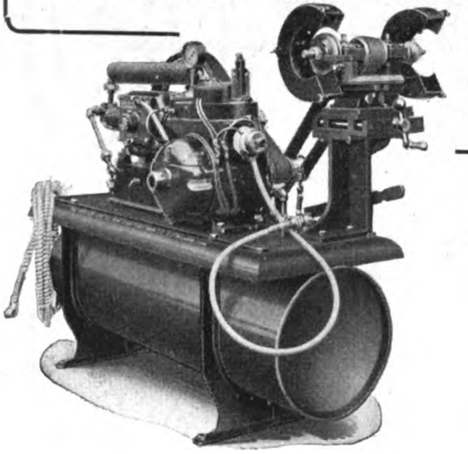
This buffing or grinder head is made according to the most approved design and is suitable for handling tire roughing wheels and polishing or grinding wheels.

It will handle two wheels of eight-inch diameter and the construction is as strong and rigid as could be desired or required.

The motor is of sufficient capacity and the entire machine so designed as to permit the compressor and wheel head to be operated together or singly. Automatic controls prevent overcharging of the air tank and the entire construction of the unit is as near fool proof as possible.



# A New Money Saver for Garage and Tire Shop

AT THE New York Auto Show tire repair and garage men saw, for the first time, a machine that exactly meets a crying need they had experienced for a long time. This machine was the

**DeLuxe Combined Two Stage Automatic Air Compressor and Buffing or Grinder Head—Two Valuable Machines in One.**

Having known the DeLuxe Air Unit for several years as an unequaled success, and seeing the new improvements incorporated in a manner that assured absolutely satisfactory results, it is needless to say that an unprecedented number of orders were placed at once.

Every tire shop requires air facilities and tire roughing equipment, while every garage must have free air service and grinding wheel facilities. The practise has necessarily been to buy an air compressor with a motor and a buffing head with a motor or countershaft equipment from which to run it.

This new DeLuxe unit combines all this necessary equipment in one machine, to the definite and valuable advantage of purchasers. It saves the cost of an extra motor, avoids the necessity of buying a countershaft, conserves valuable floor space, saves expense in installation and gives results not only equal, but superior to the old method.

The many advantages of this new unit are described in detail in a special circular just issued. Write for a copy today.

***See Our Exhibit at the Auto Shows***

**Chicago—Space 3**
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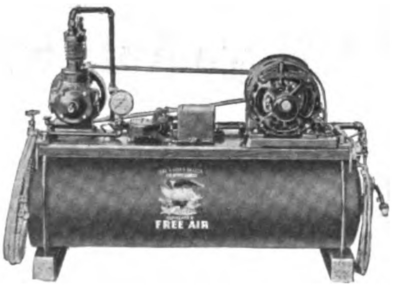

**U. S. Single Stage Automatic Air Unit**
**Equipment D22**

Cap. 2½ Cu. Ft. Per Minute.
An automatic single stage outfit for maintaining a supply of air ready for use at any time. Suitable for garage, free air service, etc.

## The United States Air Compressor Co.

**6538 Carnegie Ave. Cleveland, O.**

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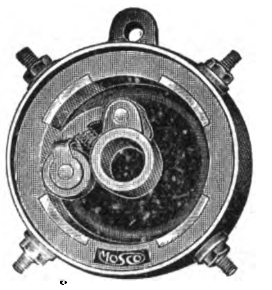

MOSCO

# Timer For Ford Car

**Extra heavy pressed steel shell, aluminum finish. Insulating ring of gray bone fibre.**

**Terminals insulated all the way through. One-hand, self-closing oiler. Pressed steel arm and compression spring on brush assembly. Brush assembly sold separately. Interesting prices. Immediate delivery.**

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## VULCANIZERS.

Cover every requirement. Dealers who sell them can meet the demand for ***all*** sizes—because the line is ***complete.***

**ADAMSON MFG. COMPANY**
**EAST PALESTINE OHIO**

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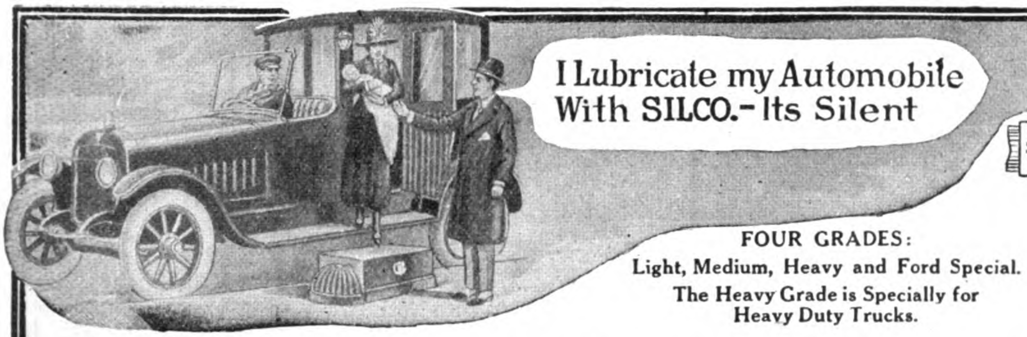
# A·B·C

**STARTING & LIGHTING SYSTEM FOR FORD CARS**
**TWO UNIT SIX VOLT**

Conforms more closely to Ford engineering and construction than any other electric starting system ever sold.

**A. B. C. STARTER CO., Detroit, Mich.**



FOUR GRADES:
Light, Medium, Heavy and Ford Special.
The Heavy Grade is Specially for
Heavy Duty Trucks.

SMOOTH AUTOMOBILE SILCO LUBRICANTS AS SILK

**LOOK FOR THIS TRADE MARK**
**IT PROTECTS THE DEALER AND CONSUMER**

**SILCO**

**TRANSMISSION AND DIFFERENTIAL GREASE**
**STOPS THE LEAKS**
**FINDS THE SQUEAKS**
**INSURES CAR SERVICE**

SILCO is the perfect lubricant for transmission and differential gears. It possesses far greater lubricating properties than ordinary greases. It forms a positive and lasting cushion between all points of contact, and quiets noisy gears. Silco does not leak or drip, and its efficiency is unaffected by heat or cold.

SILCO minimizes friction, and eliminates expansion from heat, thus preventing undue wear on gears and bearings. Cuts repair bills and is guaranteed to afford entire satisfaction.

*Jobbers and Dealers: Our inducements are extremely liberal. Send for further lubricating facts and special trade discounts.*

*WRITE TODAY TO*

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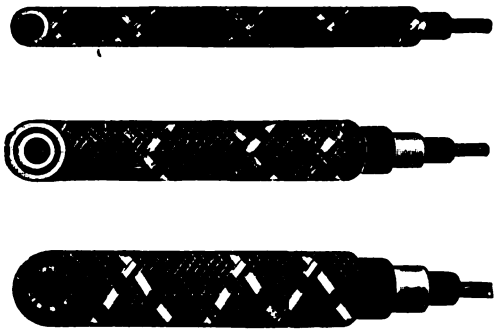

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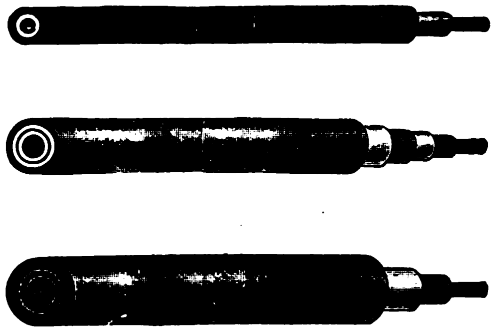
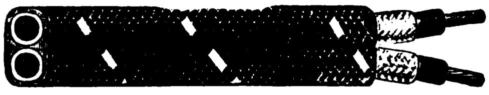


Primary

Magneto

Secondary

BRAIDED



"ARMORED"

DUPLEX
Lighting

***WE CAN SHIP FROM STOCK***

41 Warren St **J. H. FAW, Inc.** New York

AMBU Electric Trouble Shooter is an instrument which automatically detects and locates accurately and quickly trouble in any American made starting and lighting system used as standard on any American made cars—

**AMBU SERVICE**

shows you *what* the trouble is and exactly *how* to repair it.

**Write for Complete Details.**

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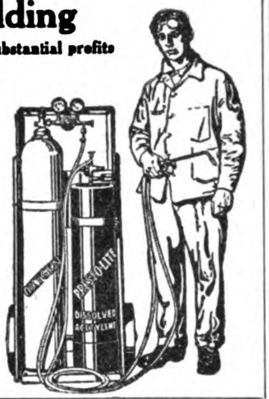
CHICAGO - ILL.



**Add to Garage Profits by Oxy-Acetylene Welding**

Savings made please your patrons and pay good substantial profits

**PREST-O-LITE**
**Dissolved Acetylene**
**(Ready-made carbide gas)**

adds to the efficiency and usefulness of any good welding equipment. We furnish thoroughly high grade welding apparatus for $75.00. (Canada $100.00). The average user will also need gas cylinders at an additional cost, and about $10.00 worth of welding supplies. Truck and special equipment for cutting operations at extra cost.

***Send for details of Prest-O-Lite Service for Oxy-Acetylene Welding.***

**The Prest-O-Lite Co., Inc.**
*World's Largest Makers of Dissolved Acetylene*
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***DO TIRE REPAIRING-***

**as a separate business department of your Garage. Business easy to get, grows steadily, and pays well; only small capital required and opportunity everywhere. For best work and surest profits use**

**Akron-Williams**
**TIRE REPAIR EQUIPMENT**

*Used and recommended by 60 Leading Tire Companies*

*Send for booklet No. 12 and catalogue on complete outfits for every size garage.*

**THE WILLIAMS FOUNDRY & MACHINE CO.**
Ash Street, Akron, Ohio

**SCAIFE COPPER-BRAZED AIR TANKS**

are positively guaranteed to hold air indefinitely without loss of pressure.

**CAUTION**

Do not confuse Scaife Copper-Brazed Tanks with the cheap Welded or Soft-Soldered Tanks made by others.

We Also Manufacture
**SCAIFE GASOLINE STORAGE OUTFITS**

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**Have you received your copy?**

It is a ***Book of Knowledge*** that enables you to become an electrical expert in your automobile work. No more guessing at what you need. It is a complete illustrated catalog of contacts, starter and generator brushes. ***Free*** to every repair man. This is a line that will build up a splendid business. Ask about our Cash Register of contact parts proposition. Write today.

PAUL G. NIEHOFF & CO., Inc.
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**The MANLEY GARAGE AND SHOP EQUIPMENT**

**Every garageman and repairman should get our catalog. You'll find in it just the time and labor savers you need, and their prices will astonish you by their moderateness.**

*Send for your copy of this catalog today*

**THE UNITED ENGINE & MFG. CO.**
**Hanover, Pa.**

**Patent For Sale**

Serial No. 1251998, issued Jan. 1, 1918, covering Signal Device for Motor Vehicles, designed to indicate at night that a turn is to be made, and the direction thereof. Copies of the above patent may be obtained for five cents each in currency, by addressing the Commissioner of Patents, Washington, D. C.

**JOHN L. GLEASON**
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**BUY FORD HOOD COVERS NOW.**
**BUY FROM US.**

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We want your orders. Tell us your requirements. This is the time for you to "get in" on big sales and profits that will surprise you.

**MARTIN MANUFACTURING CO.**
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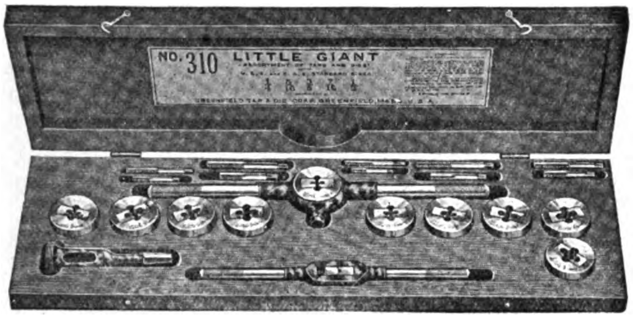
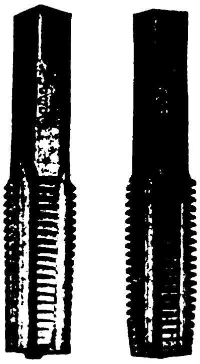


Little Giant Screw Plate

# The Complete Line of Threading Tools



Hand Taps

Whatever your requirements in the screw cutting line may be, we can meet them, as our line is the most complete in the world. Bear in mind that our service in the threading tool line is unexcelled.

Ask for a copy of our No. 37 general catalog which contains besides the products listed below many tables of valuable information for garage repair men, etc.

Below is a partial list of products shown in the catalog.

Little Giant Die

**Taps**—All kinds, for hand and machine use, in all thread standards.

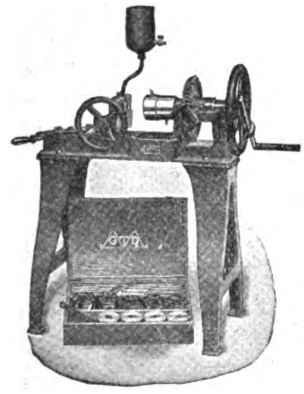
**Dies**—Several styles, for hand and machine use, in all thread standards.

**Screw Plates**—Many styles and assortments for bolts, nuts and pipe, with Automobile (S.A.E.), U.S.S. or V threads, combination assortments with both U.S.S. and S.A.E. thread taps and dies.

**Pipe Tools**, Wrenches, Vises, Cutters, Stocks and Dies.

**Reamers**—Hand and Machine, bitbrace and straight shanks, all types.

Send for a catalog for ready reference.

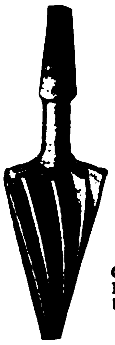


G. T. D. Threading Machine

G T D

## Greenfield Tap and Die Corporation

**Greenfield, Mass.**



G. T. D. Burring Reamer

New York, 28 Warren St.
Chicago, 13 South Clinton St.
London, 149 Queen Victoria St.
Canadian Factory, Wells Brothers Company of Canada, Ltd., Galt, Ont.

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# STA-TITE Piston Rings

Play an Important Part in the Success of America's Leading Automobiles, Motor Trucks and Tractors.

Every automobile engineer will tell you that the Life, Power, Speed, Hill Climbing Ability and Operating Cost of a gasoline driven vehicle depends on its motor.

The strength and power of any motor depends largely on its compression. Perfect Compression means an efficient, clean, smooth running motor.

A motor without perfect compression is troubled with improper lubrication, lack of power, and an accumulation of carbon.

STA-TITE RINGS give Perfect Compression and overcome these troubles—besides saving on oil, gasoline and repair bills.

STA-TITE RINGS insure proper lubrication and prevent pistons from wearing dry and scoring cylinder.

STA-TITE RINGS are guaranteed to be leak proof.

**Dealers** You should sell STA-TITE RINGS. The three piece construction assures equal distribution of pressure on cylinder walls.

Remember—STA-TITE RINGS are manufactured by the largest manufacturers of piston rings in the world.

Send NOW—TO-DAY for "TWELVE REASONS" why STA-TITE RINGS will prove to be business builders.

THE Piston RING COMPANY
SPECIALISTS IN PISTON RINGS

110 Sanford St. Muskegon, Mich.

*Makers Also of "Quality" Snap Rings*

# Knocking Gears
and
# Knocking Customers

become a thing of the past
when your customers' cars
are lubricated with

**DIXON'S**
**GRAPHITE**
**Automobile**
**LUBRICANTS**

*Write to us for Dixon's Dealer's Deal No. 49-G*

**Made in Jersey City, N. J., by the**

**JOSEPH DIXON CRUCIBLE CO.**

Established 1827

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# Push Your Business —

*I'll Show You How to Increase Your Winter Trade.*

THERE is business all around you. Good, profitable business that will bring in many an extra dollar. Don't wait for spring. Do business all winter. I'm helping garage men and supply dealers to do more business. I'll help you. Write on your business paper that you're ready for more business. I have nothing to sell but service backed by nine years' experience in promoting sales successfully.

*Write*
**Edward W. Bacon**
**BACON SERVICE**
151 Grand St., New York

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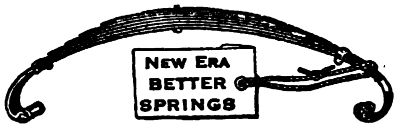
**Stop the Spring Breakage**



It's a poor policy to risk repeating the annoyance of a broken or weak spring—and the delay—by saving only a very little in buying or selling a **cheaper** spring instead of a **"New Era BETTER Spring."**

Don't replace a broken spring with one no better.

Wise dealers sell only the best.

**New Era BETTER Springs** are the oldest and largest used line for replacement—at same price as from car factories. Made for all cars, **guaranteed** one year against breakage or sagging, graphited between leaves for two years' lubrication.

**New Era Spring & Specialty Co.**
1177 Hamilton Ave., Grand Rapids, Mich.

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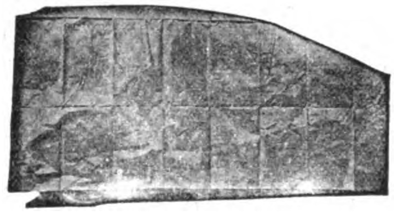

# KENNEDY AUTO STORAGE COVERS

Furnish efficient and economical protection for cars in dead storage. They are made of heavy, durable paper in standard sizes to fit any cars.

MADE ONLY BY

**THE KENNEDY CAR LINER & BAG CO.**
SHELBYVILLE, IND.

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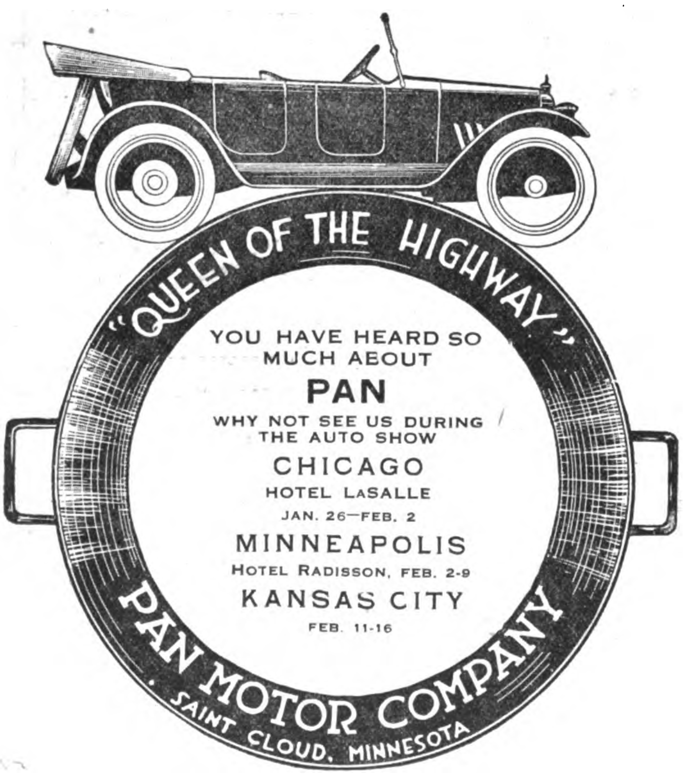

YOU HAVE HEARD SO MUCH ABOUT
PAN
WHY NOT SEE US DURING THE AUTO SHOW
CHICAGO
HOTEL LASALLE
JAN. 26—FEB. 2
MINNEAPOLIS
HOTEL RADISSON, FEB. 2-9
KANSAS CITY
FEB. 11-16

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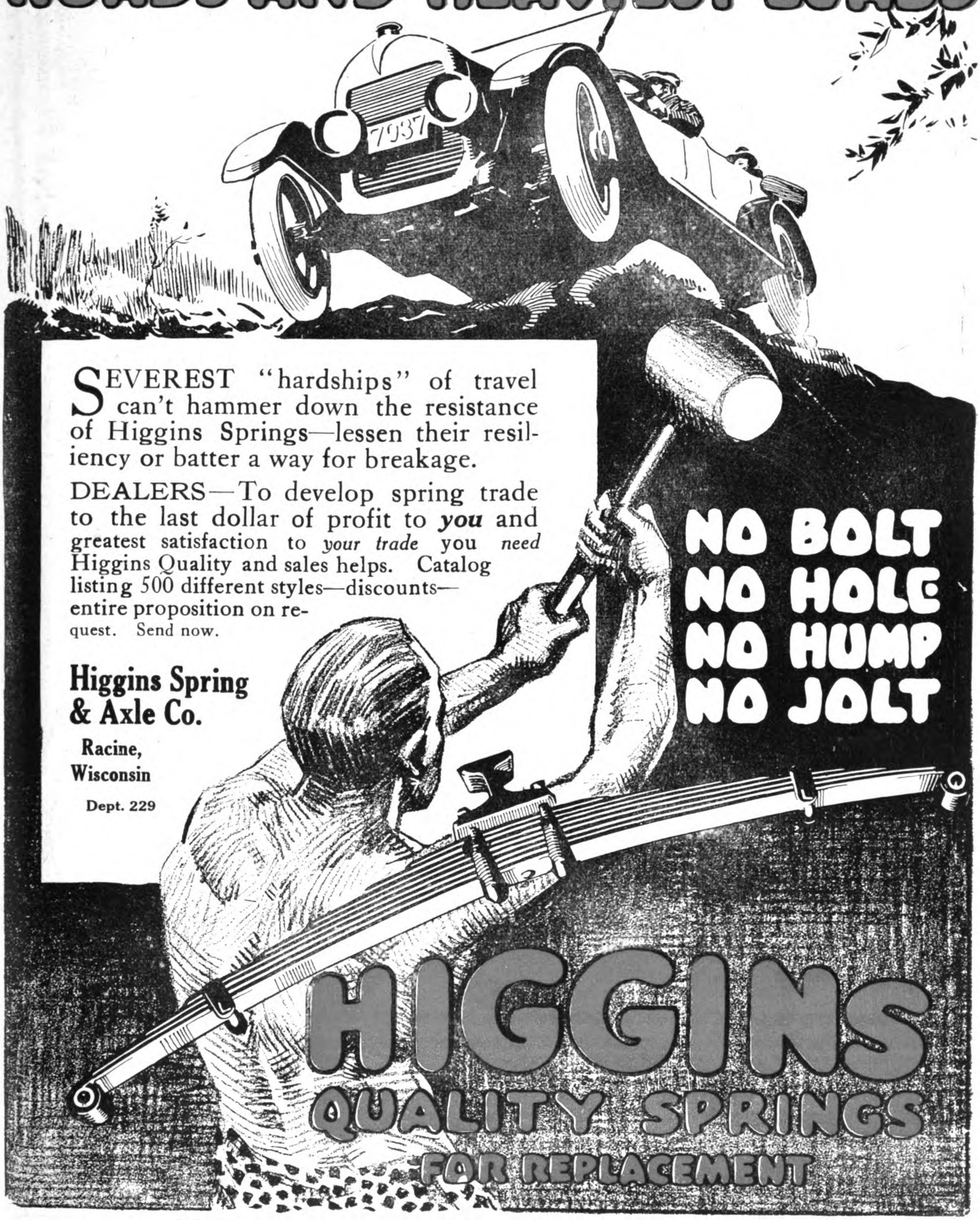
NEW DEPARTURE
BALL BEARINGS

*Strength*
*Stamina*
*Service*

The New Departure Manufacturing Co., Bristol, Conn.
*Conrad Patent Licensee*

# STAND THE "POUND" OF THE ROADS AND HEAVIEST LOADS


7037
NO BOLT
NO HOLE
NO HUMP
NO JOLT
HIGGINS
QUALITY SPRINGS
FOR REPLACEMENT

SEVEREST "hardships" of travel can't hammer down the resistance of Higgins Springs—lessen their resiliency or batter a way for breakage.

DEALERS—To develop spring trade to the last dollar of profit to ***you*** and greatest satisfaction to *your trade* you *need* Higgins Quality and sales helps. Catalog listing 500 different styles—discounts—entire proposition on request. Send now.

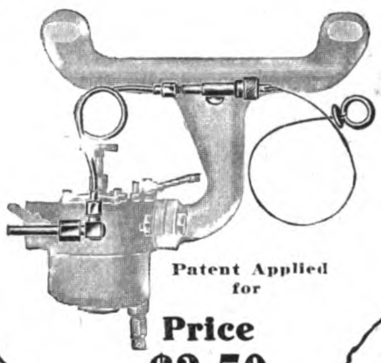
**Higgins Spring & Axle Co.**

**Racine,**
**Wisconsin**

**Dept. 229**

# THE J&B LINE

## TIMERS, GASOLENE INJECTORS SPARK PLUG SHIELDS



Patent Applied for

**Price $3.50**

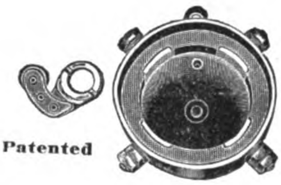
### *The J & B Gasoline Injector*

is absolutely dependable, easily installed without changing motor or cutting dash. A pull on ring through radiator forces spray of gasoline into intake.

### *The J & B Timer*

is simple in construction and easily oiled through patented spring-hinged dust-proof cover.

94-4



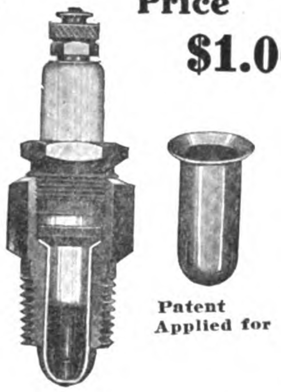
Patented

**Price $1.40**

### *The J & B Timer*

outwears any other timer and always works. All rotor difficulties are overcome.

**Price $1.00**



Patent Applied for

### *The J & B Spark Plug Shield*

absolutely prevents fouling and insures snappy ignition and continuous running without necessity of cleaning plugs. Designed for Champion X Plugs on Fords.

Address 67A Eagle Street, Pittsfield, Mass.

## The J&B Manufacturing Co.
## PITTSFIELD, MASS.

# PISTONS FOR THE FORD

## REGULAR WEIGHT

**Made of a close-grained grey-iron.**

**Grinding Finish**

**Complete with Rings, Pins and Bushings**

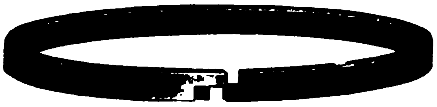
***Manufactured in Both Standard and Several Oversizes.***

***With or Without Bushings***

***Fitted with LAP JOINT Rings—a decided advantage over the diagonal cut usually furnished.***

**PRICE TO GARAGES AND DEALERS, $1.25 COMPLETE**

**When fitted with one TAYLOR RING on each piston $6.33 per set.**



## TAYLOR RINGS for FORDS

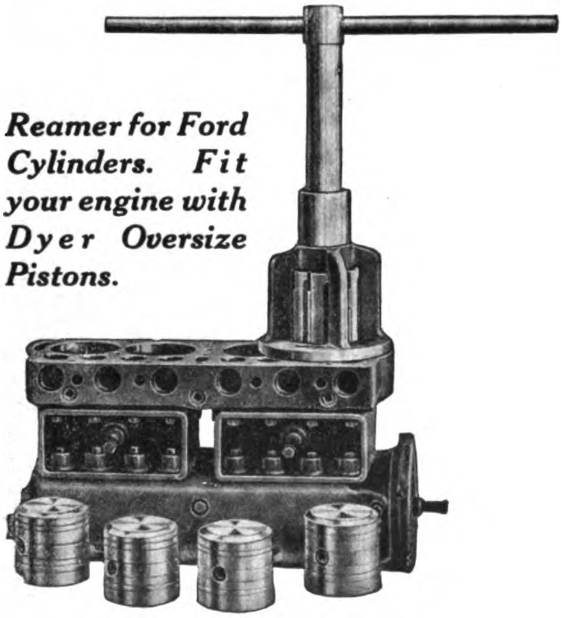
***In Standard and Oversizes***

A strong absolutely round, one-piece ring, carefully machined and ground to size. An eccentric ring with a joint which is actually leakproof, compression-tight and which is designed to compensate for wear and yet be gas-tight and oil-tight when the joint is open 1-8 of an inch.

***STOPS*** Loss of Compression, Oil Throwing, Carbon Troubles.

***GIVES*** More Miles on Gas and Oil. Strong Continuous Service From the Motor.

It is impossible for carbon to collect and force open the joint of the Taylor Ring which bears and wears uniformly at all points on the cylinder wall.



*Reamer for Ford Cylinders. Fit your engine with Dyer Oversize Pistons.*

## SPECIAL LIGHT WEIGHT

**ONE Pound lighter than the Standard Ford Piston**

**Will not vary in weight more than TWO OUNCES**

**REDUCES BY FOUR POUNDS THE WEIGHT OF RECIPROCATING PARTS**

Possesses all the advantageous features of alloy and aluminum pistons without their bad features, such as slapping, oil throwing, seizing and poor compression.

This piston is tough, durable, absolutely round, perfectly machined, has domed head, uniform walls, special oiling features and is accurately fitted with special lap joint rings.

**DECREASES** the crank shaft, wrist pin, connecting rod, piston and cylinder wear!

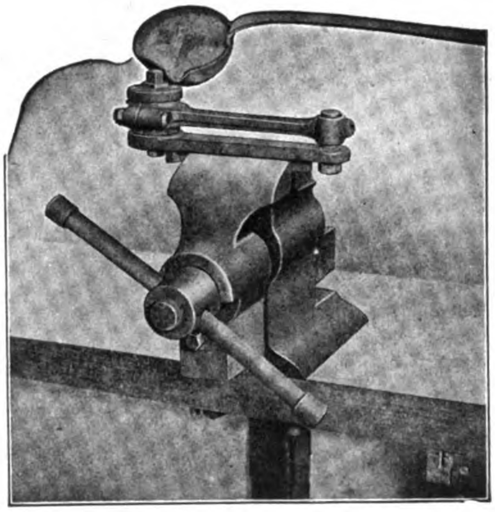
**INCREASES** the speed!

**INCREASES** the acceleration!

**DECREASES** the vibration of the car; the gasoline and oil consumption!

**DECREASES** the chances of a knock in the motor!

## REBABBITTING JIG



**For Ford Connecting Rod Bearings**

**WILL PAY FOR ITSELF IN THE FIRST JOB OR TWO**

*VISIT OUR EXHIBIT AT BOSTON SHOW—SPACES 413-414*

**THE G. H. DYER CO., - - Cambridge, Mass.**

1 POUND
FINE
READY FOR USE
CARBORUNDUM
VALVE GRINDING COMPOUND
MANUFACTURED BY
THE CARBORUNDUM COMPANY.
NIAGARA FALLS, N. Y.

THAT valve grinding job is a hard one at best—but you can make it easier—do it quicker and get better results if you use

**Carborundum Valve Grinding Compound**

A mixture of Carborundum, the hardest, sharpest, fastest-cutting material known, and a high-grade grease. Clean and free cutting, it quickly and easily cuts away the carbon and pit marks.
Absolutely uniform, it leaves a true, clean, unscored valve seat.

**Saves Time—**
**Saves Work—**

Put up in one- and five-pound tins. coarse, medium and fine.
Sample Can sent on request.

*Sold by your supply dealer, hardware dealer or direct*

1 POUND
COARSE
READY FOR USE
CARBORUNDUM
VALVE GRINDING COMPOUND
MANUFACTURED BY
THE CARBORUNDUM COMPANY.
NIAGARA FALLS, N. Y.

**The Carborundum Company**

Niagara Falls, N. Y.

# NEW—DRY FUEL

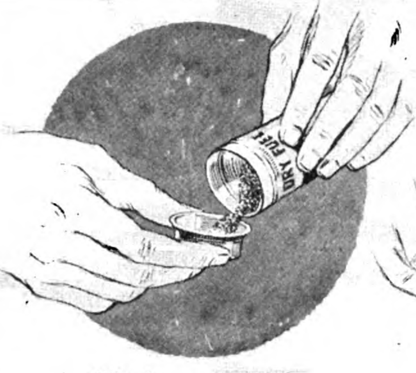
# ADAMSON

**·MODEL "E"**

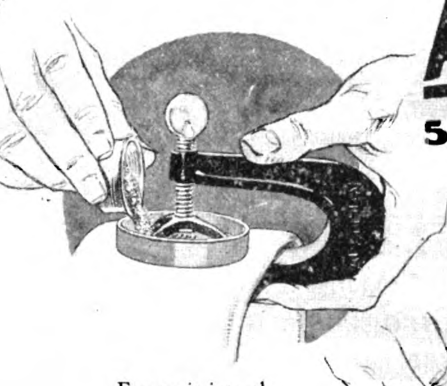
**5-MINUTE VULCANIZER**

***For Tube Punctures***

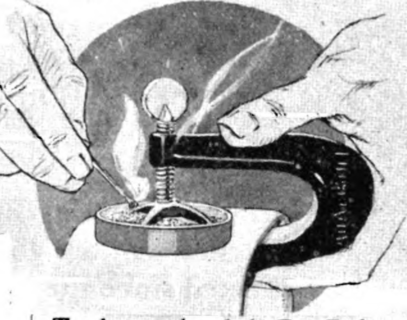
**NO FLAME
IT GLOWS**



Fill the measure with Dry Fuel—



Empty it into the Vulcanizer—



Touch a match and the Dry Fuel burns with a hot glow—no flame. Gasoline can be used instead of Dry Fuel if desired.

ADAMSON
5-MINUTE REPAIR GUM
DIRECTIONS
25¢ TWELVE PATCHES 25¢

**$1.00**

THE only Vulcanizer for tube punctures that is sure in its work, whether you use common gasoline or dry fuel. Vulcanizes a patch *permanently* in five minutes.

Adamson Dry Fuel is flameless; it burns with a hot glow; is furnished in a handy can; does not absorb dampness; and remains uniform under all conditions. This handy outfit weighs complete only one pound. Every motorist will want a New Adamson 5-Minute Vulcanizer. Complete outfit includes 5-Minute Vulcanizer, can of Dry Fuel, box of 12 patches, measuring cup, and directions for repair. Extra fuel, 12 charges, 50c; Box of 12 extra patches, 25c.

**NEW PRICES ON**

# ADAMSON

## VULCANIZERS

## Greatly Increased Production

and the fact that we make Adamson Vulcanizers complete in our own plant, has cut down our manufacturing costs, and enables us to make a substantial reduction in prices.

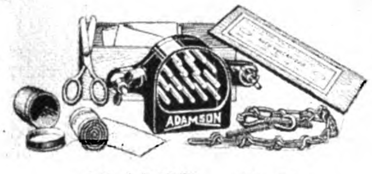
Adamson Vulcanizers are universally known as the simplest and surest in operation. More than a million motorists are now using and recommending them to-day.

At the old prices, they outsold all competing makes. At these new prices, and with the Dry Fuel feature of Model "E", Adamsons will sell faster than ever. They will pay you a handsome profit.

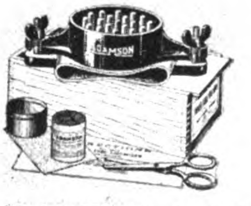
Ask your Jobber for Adamson Vulcanizers, and Adamson Repair Gum. Write us for Adamson Catalogs, Displays and Selling Helps.

**ADAMSON MANUFACTURING CO.**
EAST PALESTINE, OHIO.

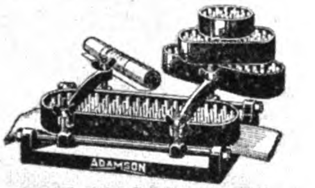
*We also make Adamson Ford Brake Shoes, Lined and Unlined.*



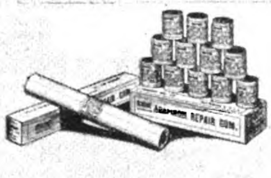
Model "U" For Cases and Tubes. **$2**



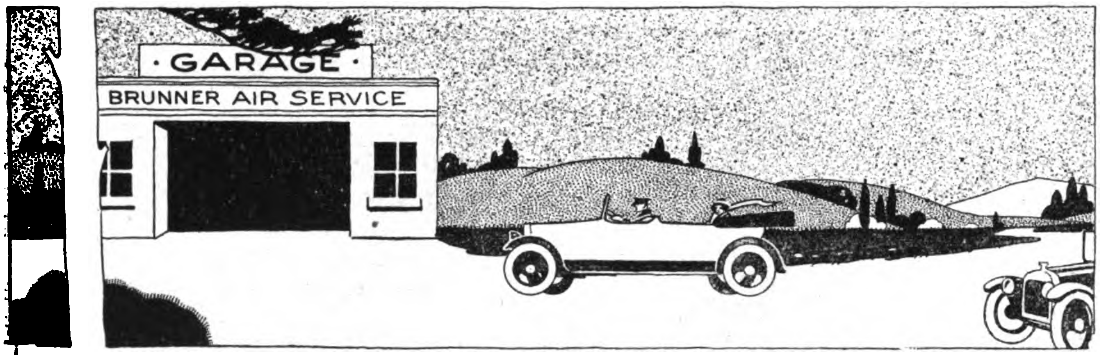
Model "T" For inner tubes only. **$1.50**

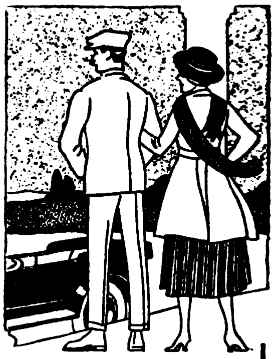


Model "S" For private garages and repair shops. **$12**



Adamson Repair Gum for all portable vulcanizers

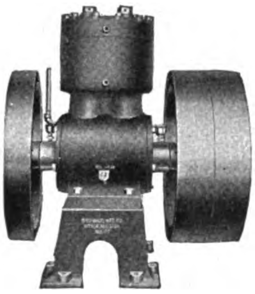




*With pleasing smile and twinkling eyes*
*The garagemen who are Brunnerwise*
*Will tell you where the secret lies*
*Of an air supply which satisfies—*

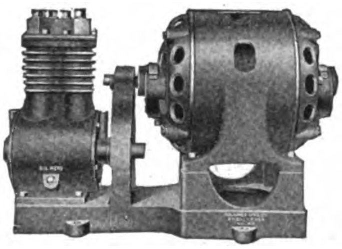
Yes; the Garageman using Brunner Air Compressors will tell you that Brunner Service satisfies and they will tell you that all of their bothersome compressed air troubles have been eliminated since they have installed the Brunner Air Compressor in their garage. Drop into the first garage you see displaying the Brunner sign and see if this is not so.

A Brunner Air Compressor in your garage would eliminate all of your compressed air troubles—and it would enable you to render your patrons a highly efficient, absolutely reliable compressed air service such as they would appreciate.



A Brunner Service Sign on your garage would advertise the fact that your garage is strictly up-to-date—it would bring to your door the trade of the Brunnerwise Motorist who recognizes the Brunner Sign as a sure sign of prompt and efficient service.

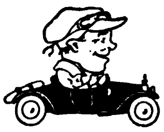
## INVESTIGATE THE BRUNNER AIR COMPRESSOR



The Brunner is the pioneer of all Garage Air Compressors—it has been making good in the garage ever since the garage business has been a business—the Brunner Air Compressor is properly designed and built to suit the garageman's special requirements. No freakish attachments and no restriction of the lubrication to invite disaster but simply the same good substantial business proposition it has always been for the garageman who progresses with the times.

***Our new No. 15 Catalogue is the most complete and comprehensive book of its kind ever published. We will be glad to send you the catalogue and the name of the Brunner jobber who covers your territory.***

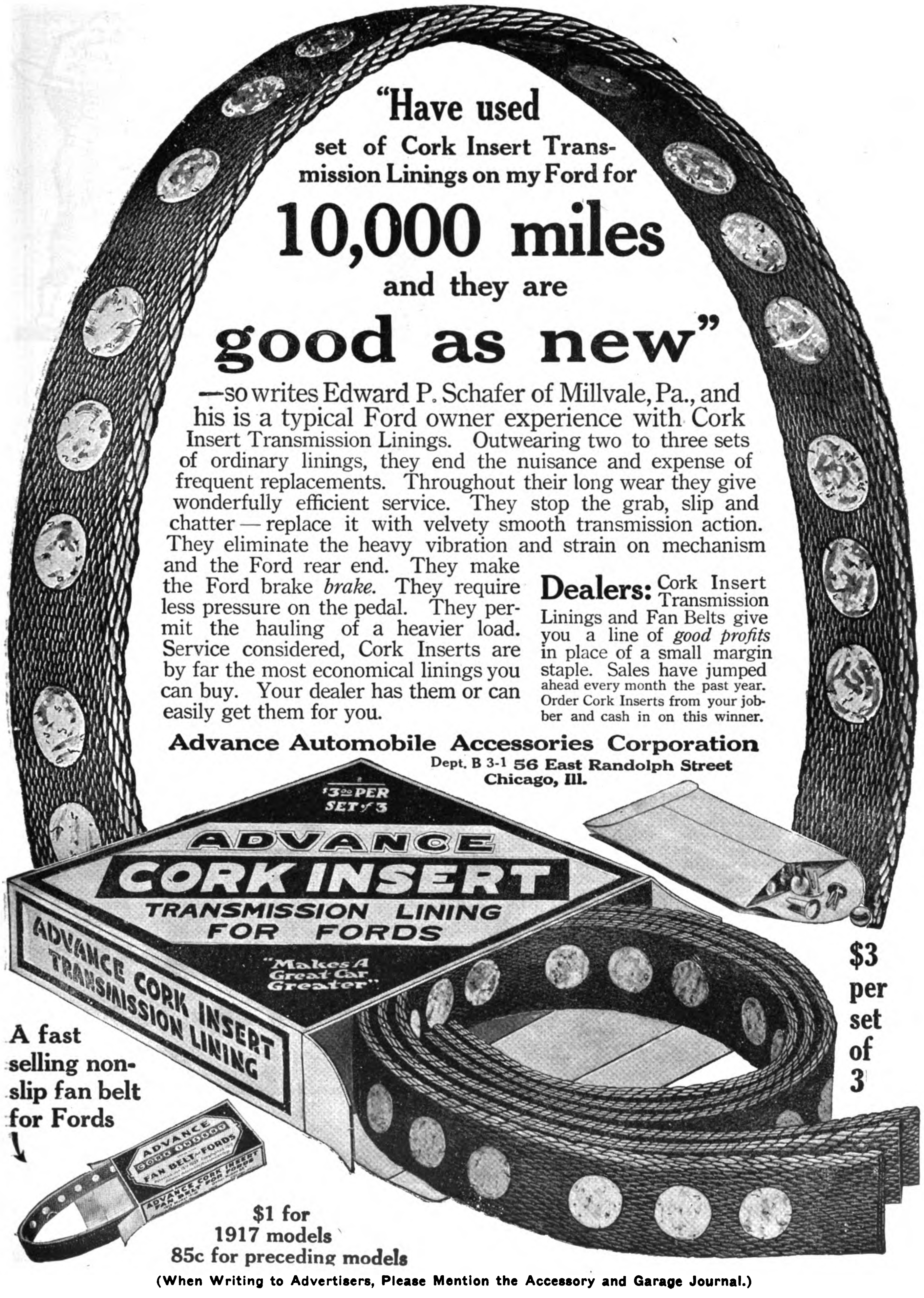
## BRUNNER MANUFACTURING COMPANY



**Main Office and Plant:**
**UTICA, N. Y.**

**Cincinnati Branch:**
**CINCINNATI, OHIO**

**"The Motorist Who is Brunnerwise—Knows Brunner Service Satisfies"**


$3.00 PER SET of 3
ADVANCE
CORK INSERT
TRANSMISSION LINING
FOR FORDS
"Makes A Great Car Greater"
ADVANCE CORK INSERT TRANSMISSION LINING
ADVANCE
FAN BELT-FORDS
ADVANCE CORK INSERT FAN BELT FOR FORDS

"Have used set of Cork Insert Transmission Linings on my Ford for

**10,000 miles**

and they are

**good as new"**

—so writes Edward P. Schafer of Millvale, Pa., and his is a typical Ford owner experience with Cork Insert Transmission Linings. Outwearing two to three sets of ordinary linings, they end the nuisance and expense of frequent replacements. Throughout their long wear they give wonderfully efficient service. They stop the grab, slip and chatter — replace it with velvety smooth transmission action. They eliminate the heavy vibration and strain on mechanism and the Ford rear end. They make the Ford brake *brake*. They require less pressure on the pedal. They permit the hauling of a heavier load. Service considered, Cork Inserts are by far the most economical linings you can buy. Your dealer has them or can easily get them for you.

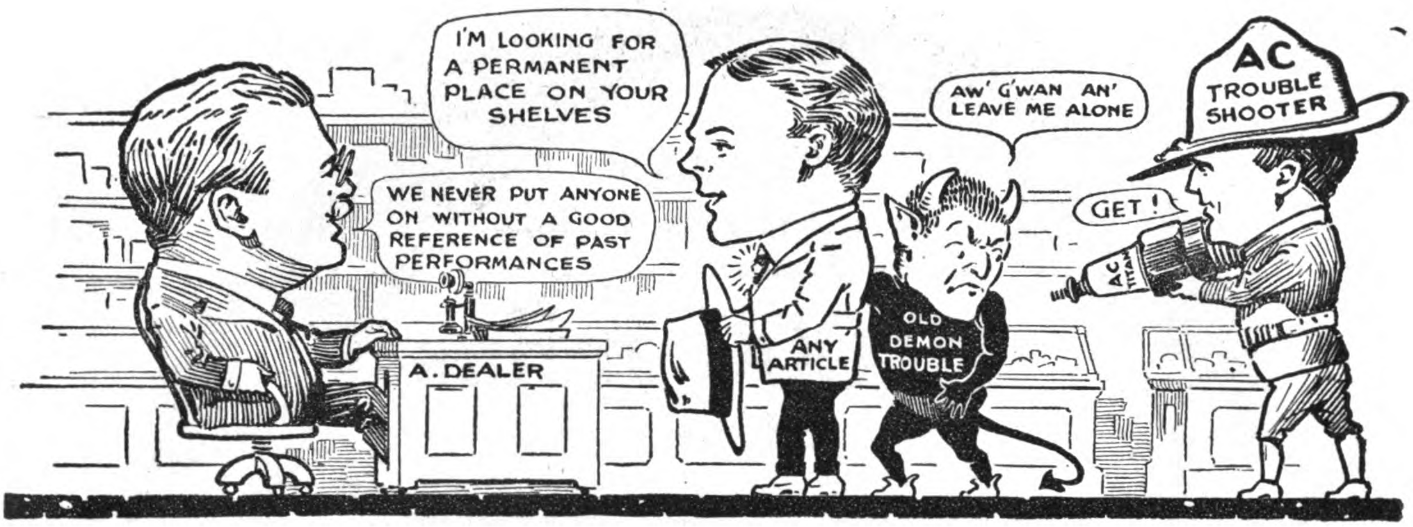
**Dealers:** Cork Insert Transmission Linings and Fan Belts give you a line of *good profits* in place of a small margin staple. Sales have jumped ahead every month the past year. Order Cork Inserts from your jobber and cash in on this winner.

**Advance Automobile Accessories Corporation**
Dept. B 3-1 56 East Randolph Street
Chicago, Ill.

$3 per set of 3

A fast selling non-slip fan belt for Fords

$1 for 1917 models
85c for preceding models


I'M LOOKING FOR A PERMANENT PLACE ON YOUR SHELVES
WE NEVER PUT ANYONE ON WITHOUT A GOOD REFERENCE OF PAST PERFORMANCES
AW' G'WAN AN' LEAVE ME ALONE
GET!
AC TROUBLE SHOOTER
A. DEALER
ANY ARTICLE
OLD DEMON TROUBLE
AC TITAN

MR. Dealer: Don't let Old Demon Trouble get a "permanent place" on your shelves. He is coming—sure—sneaking in behind the innocent-looking spark plug which has no name or reputation but wants *you* to be responsible for him. Let the old reliable "trouble-shooter" AC come in and see how quick he'll put the other fellow to rout—and Old Trouble will go along with him, never to return.

**Here are the highest references a spark plug maker can give:**

**List of Manufacturers Using**

**AC Spark Plugs**

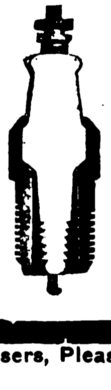
*The Standard Spark Plug of America*

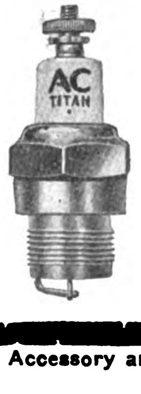
Cadillac
Pierce-Arrow
Packard
Marmon
Hudson
Chalmers
Hupp
Chandler
Haynes
Chevrolet
Dort
Cole
Reo
Paige
Peerless
Pilot
Buick
Oakland
Oldsmobile
Nash
Kissel Kar
Premier
White
Delco-Light
Murray
J. I. Case
Jordan
Liberty
McFarlan
Paterson
Lexington-Howard
Scripps-Booth
Crane-Simplex
Stearns-Knight
Saxon
Stutz
National
Stephens
Jackson
Apperson
Anderson
Locomobile
Daniels
Westcott
Singer
Dorris
McLaughlin (Canada)
American-La France
Davis
Sanford
Hatfield
Maytag
Duesenberg Motors
Dodge Brothers
Old Reliable Trucks
Titan Truck
Ford Tractors
Acme Trucks
Netco Trucks
Gabriel Trucks
Gramm-Bernstein Trucks
Moreland Trucks
Wilcox Trux
Sterling Trucks
Republic Trucks
Diamond T Trucks
F-W-D Trucks
G. M. C. Trucks
Sandow Trucks
Signal Trucks
Brockway Trucks
Samson Tractor
Menominee Trucks
Federal Trucks
Riker Trucks
Stewart Trucks
Wisconsin Motors
La Crosse Tractor
Advance-Rumely Tractor
Buffalo Motors
Continental Motors
Deere Tractors
Northway Motors
Rutenber Motors
Sterling Motors
Smith Motor Wheel
Van Blerck Motors
Wallis Tractors
Waukesha Motors

**Champion Ignition Company—Sole Manufacturers, Flint, Michigan**

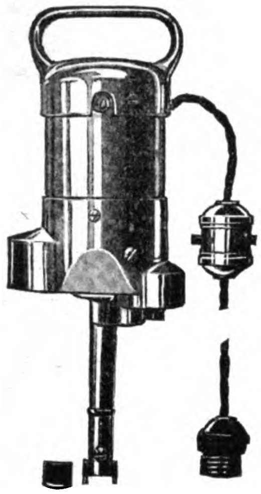
**AC Carbon Proof**

**For Fords, Overlands and Studebakers**





**⅞ in. Regular for Maxwells A C Titan**



# Stenman Electric Valve Grinder

The machine that will save at least $1 labor cost on every set of car, truck, tractor, aeroplane, marine or stationary internal combustion engine valves reground. *This is one of the sale guarantees.*

The Stenman Electric Valve Grinder is designed for either direct or alternating current and can be operated from any standard lighting circuit.

Any type valve can be reground, either L, T or I-head construction.

It will renew a valve seat perfectly, doing the work in from three to five minutes as compared with from 15 or 20 or longer with hand tools.

## *Repair Shop Profit is On Labor*

The Stenman machine will earn its cost on the first 25 sets of valves ground. After that all work is clear profit. Its earnings will be in ratio to the work done. Doing the finest and most accurate work it means satisfied and constant patronage for any repair shop or service station. It is practical for any shop. It will pay 1000 per cent. on the investment, regardless of the size of the establishment.

Splendidly built, a Stenman machine will afford service for years. It is sold with the guarantee that if defect in workmanship or material develops within six months the defective part will be replaced at the factory without charge.

## *Used By Those Who Demand Economy and Highest Grade Work*

Stenman Electric Valve Grinding Machines are used by the United States Steel Corp., the Western Electric Co., by the Government at Camp Devens and at its aviation field stations, and in many garages throughout New England.

**DEALERS AND JOBBERS:** There are almost unlimited sales possibilities for Stenman machines. We make a very liberal sales contract and insure you exclusive selling rights. Write today for details of the proposition and state territory wanted.

*Boston Show Space, Balcony, Revere Hall*

**THE STENMAN ELECTRIC VALVE GRINDER CO., Inc.**

**43 Southbridge Street**

**WORCESTER, MASS.**

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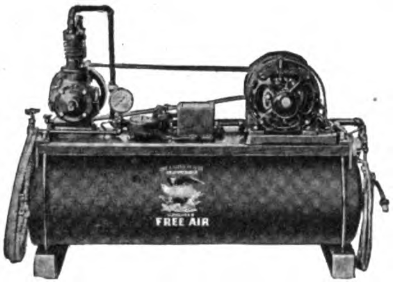


**THE WORLD'S BEST AIR COMPRESSOR**

The U. S. DeLuxe Two Stage Automatic Air Unit. Contains 14 noteworthy refinements and improvements. The ideal unit for free air stations, garages and tire shops. Capacity 4 cubic feet per minute. Completely self contained.

Found in a majority of the best garages. Standard equipment with companies of national prominence.

# *Facts About the U. S. Two-Stage Air Compressor*

THE U. S. Two Stage Air Compressor represents the highest attainments from any standpoint one might judge it.

The efficiency is greatly increased, less power is required and the design furthermore answers the longest possible life with freedom from repair expense.

The noise of running has been so nearly eliminated that it can be truly said to be practically noiseless.

The definite tangible reasons for efficiency of the U. S. Two Stage Compressor are described in detail in our new catalog, just off the press. Every one interested in air compressors should be conversant with these facts.

## The U. S. Single Stage Line

The best is always the cheapest in the long run, but, nevertheless, there exists a demand for comparatively low priced outfits.

To meet this demand we have developed a line of single stage air compressors, including complete automatic, semi-automatic and portable outfits of varying capacity, which are recommended as the most efficient of this type in existence.

Send for the U. S. Catalog just off the press.

**The United States Line** comprises 20 different numbers in Two **Stage** and **Single Stage Types** and various individual equipment adapted for forming combinations of almost unlimited kinds and capacities.

**THE UNITED STATES AIR COMPRESSOR CO.**

**6538 Carnegie Avenue**

**CLEVELAND, OHIO**

**CUT OUT AND MAIL**

City

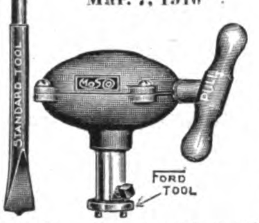
State

Please send your catalog advertised in Accessory and Garage Journal to address in margin.

(When Writing to Advertisers, Please Mention the Accessory and Garage Journal.)

# SOLD BY ALL JOBBERS

Patented Mar. 7, 1916



## The Mosco Valve Grinder

This tool differs radically from others in several respects. It is really more of a machine than a hand tool, as it renders valve grinding an accurate mechanical operation rather than a guesswork hand job.

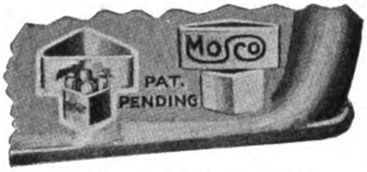
It has been found that a much more rapid motion can be obtained with the Mosco Grinder than with the ordinary tool, resulting in a very superior finish on the seats.

The device is made of the best materials and is thoroughly guaranteed in every respect. At the low price at which it is listed there should be one in every kit, when it is considered that it is offered not only as a tool, but as a QUICKER, SAFER and BETTER METHOD of valve grinding.

**PRICE $1.75.**
**SIZE (IN CARTON), 3⅝x6¼x3⅝. WEIGHT, 30 OZ.**
**SHIPMENTS PACKED TO ORDER.**

## Mosco Socket Nut and Bolt Holder for Ford Car

A REAL TIME SAVING DEVICE. Takes the place of that other man whose help is usually required for this operation.



**Position Crank Case Bolts**

Simply slip MOSCO Nut and Bolt Holder over the top of each engine or Transmission nut or bolt head, the wings protruding above the hex socket engage wall of crank or transmission case and prevent nut or bolt head from turning while the man underneath the car unscrews the bolts.

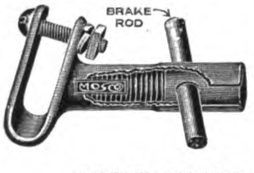
When replacing put head of bolt on top, slip on the MOSCO socket and proceed as in taking out.

Made of heavy pressed steel, with reinforced wings welded to body of socket. All case hardened and finished bright.

**PRICE 15c EACH.**

## Mosco Brake Rod Guides for Ford Car

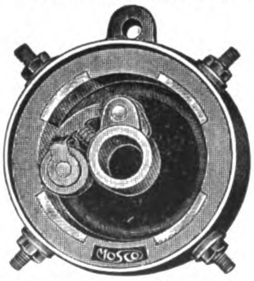
Will positively silence the objectionable rattle of the Ford brake rod, without impeding its full movement. The ends of these guides are provided with bayonet lock slots so they may be slipped over the brake rods without removing same from the car, also the slot is so designed that the rods cannot shake out. The grease cup prevents wear of the rods and permits easy action. Made of semi-steel and very easily applied.



**PRICE, PLAIN, 40 CENTS PER PAIR.**
**PRICE, WITH GREASE CUP, 60 CENTS PER PAIR.**

## Mosco No. 200 Timer for Ford Car

The case is made of extra heavy pressed steel, finished in aluminum. Gray bone fibre is used for raceway, with steel inserts dovetailed in and all lathe finished to a polished surface. The threaded terminals are insulated by fibre washers all the way through to contact points, thus removing cause of short circuiting common to this style of Timer.

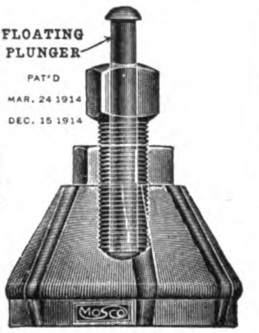


**Patented Oct. 31, 1916**

Price, complete with brush, $1.50 each. Brush assembly only, $0.40 each.

SPECIALTIES

## Mosco Floating Plunger Wheel Puller

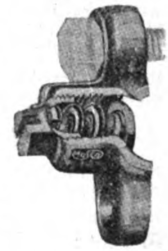


Starts a "Frozen" or "Stuck" wheel instantly. Strike the plunger; turn the screw, strike again and the wheel comes off without injury to hub-threads, spokes or axle.

Made for 200 models of 40 popular cars.

## Mosco Anti-Rattling Ball Socket for Steering Rod of Ford Car

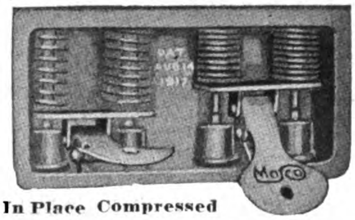
AN ENTIRELY NEW DESIGN. For taking up the wear and eliminating the rattle on worn ball sockets on both ends of steering gear connecting rod. An occasional packing of hollow hex plug with grease insures proper lubrication, smoother working and reduces wear. Tension of flat spring, which is held in position by head of bolt, prevents the hex plug in end from unscrewing. Slotted in hex end so that adjustment can be made with screw driver or wrench. Made of high grade semi-steel.



**PRICE 20 CENTS EACH.** **No. 2**

## Mosco Valve Spring Compressor for Ford Car

The use of the MOSCO Valve Spring Compressor eliminates what is usually a troublesome operation, viz., the compressing and replacing valve of springs. By using this simple device springs can remain in position until grinding of valves is completed.



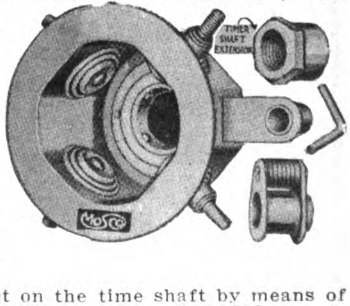
**In Place Compressed**

It compresses two valve springs at one operation and permits removing of pins. Should the pins be crosswise turn valve around until they are in position to pass through slots in compressor. After grinding valves reverse above operation. Made of heavy pressed steel.

**PRICE 50c EACH.**

## Improved Bemus Ball Contact Timer for Ford Car

The BEMUS is an IDEAL TIMER for the Ford high speed, short stroke engine, because form of contact is the only one which is correct both electrically and mechanically. This is made by a hardened tool-steel brush, mounted on eccentric cam, engaging spring-pressed steel balls with glancing impact, both the brush and the balls turning each time so that fresh contact surfaces are continually made. The brush comes in contact only with the four balls, touching no fibre or insulation.

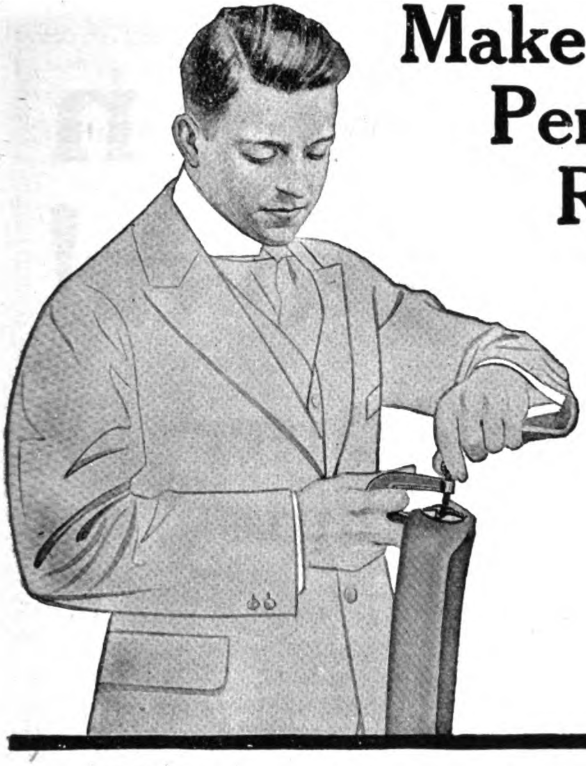


**MOUNTING** is direct on the time shaft by means of an extension piece which is screw threaded on to shaft, and runs in ball bearing placed in recess of timer shell. This means that each of the balls is equi-distant from the brush. **RESULT**—absolute precision of timing.

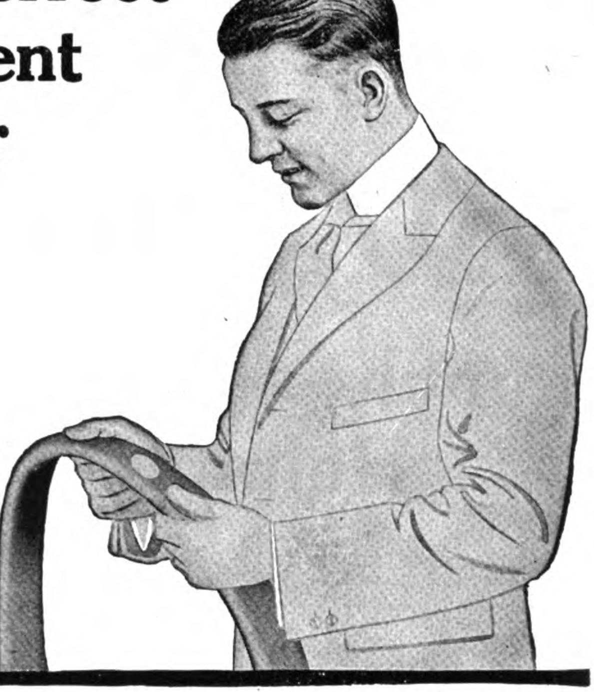
**SIZE (IN CARTON), 3¾x3x2. WEIGHT, 9 OZ.**
**PRICE $2.25.**

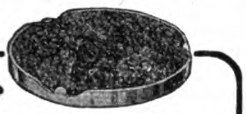
*Your Jobber Has Them in Stock*

## MOTOR SPECIALTIES COMPANY, WALTHAM, MASS.



# Makes a Perfect Permanent Repair



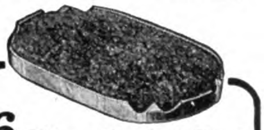


**6** Round Patch & Heat Units for Punctures
Additional Supply 75c per dozen

## Complete Outfit $1.50

*Includes*

## 12 Patch & Heat Units



**6** Oblong Patch & Heat Units for Cuts and Tears
Additional Supply 75c per dozen

The Patch & Heat Unit consists of a chemically treated combustible disc on one side and a pure para rubber patch on the other. This fits over the puncture and a match is applied to the chemical disc. Without blaze or flame this disc furnishes the proper heat, which seals the cut in the tube with the new rubber, making a permanent repair.

The Patch & Heat Unit is all ready to clamp on the tube. The fuel in its metal container and the rubber patch itself are all assembled. No different parts to lose or complicated application to the tube. Simply put the unit over the puncture, clamp it down and apply the match.

# SHALER

# 5 Minute Vulcanizer

The fact that over 500,000 motorists are now using the SHALER 5-Minute Vulcanizer is convincing proof of its ever-increasing popularity. Every motorist is a prospect for one of these handy tube vulcanizers—it should be in every car owner's tool kit—for use anywhere—on the road or in the garage.

Sell the SHALER 5-Minute Vulcanizer. Every sale of a 5-Minute Vulcanizer gives you a good profit. Besides, the big resale of patch-and-heat units furnishes you a continuous profit—it brings motorists to your place for SHALER supplies—and for all sorts of other accessories.

***The SHALER 5-Minute Vulcanizer with 6 Round and 6 Oblong Patch & Heat Units packed in attractive display carton.***

## ORDER FROM YOUR JOBBER *NOW!*

**Don't delay! The enormous demand for this popular vulcanizer makes it necessary to place your order early if you want to be sure of prompt shipment. Any jobber in the United States can supply you. Our large catalog describes the complete line of SHALER Vulcanizers for motorists' use—also complete equipment for garages and tire repair shops. Mailed free on request.**

**C. A. SHALER COMPANY, 251 Fourth Street, Waupun, Wis.**

***Oldest and Largest Manufacturers of Vulcanizers***

# Come on Men 250,000 of You!

## Launch a Blow at the Kaiser by Helping Launch a Ship

Who says we can't build ships!

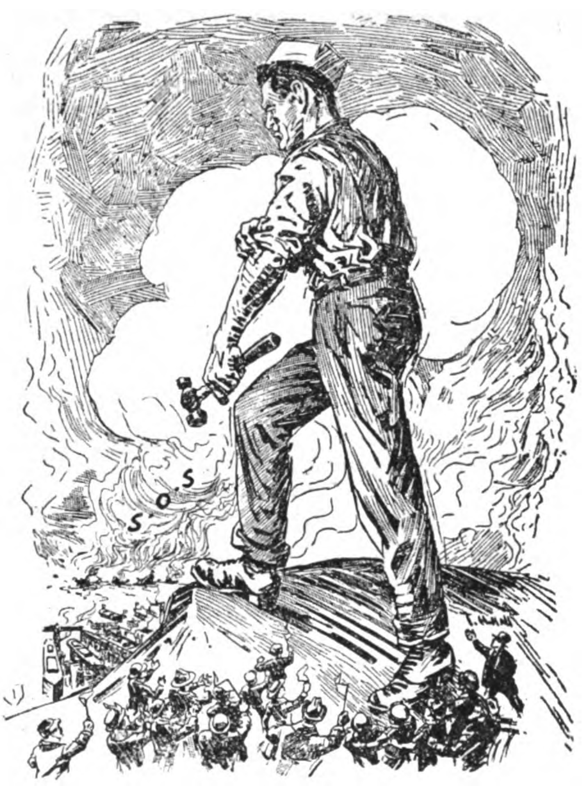
Come on you loyal American Mechanics, masters of familiar trades, and brand this "made in Germany" insinuation by building a bridge of ships to Pershing.

You can't do your country a greater service than by exchanging your good American brawn and skill for good American dollars — in the shipyard. And you'll do as much to win the war as the men dependent upon you in the trenches. Ships, men, are the pivot on which the destiny of this country turns, and Uncle Sam is looking for 250,000 U. S. shipyard volunteers to build them.

Listen!

Every rivet driven in the shipyards brings us nearer to the successful termination of the war.

To do our fair share our shipbuilding program calls for 6.000,000 tons a year, or over a thousand ships. We must have them to win. We must have them to keep the wheels of American industry moving and American labor employed in the factories.



The Man of the Hour

The Shipping Board has the money, the materials and the yards to carry out this 6,000,000 ton program, but it needs men to assure these thousand yearly launchings which will hurl their tidal wave toward Germany. There must be an immense reserve of earnest skilled labor to draw on as fast as plants are completed in the yards and housing provided.

This, then, is the purpose of this message—to ask your enrollment as a shipyard volunteer, for work in the shipyards when needed. Back up Uncle Sam and the millions of your brother workmen by your enrollment.

This does not mean that you are to give up your regular job and rush off to some shipyard which at the moment, may not be able to accommodate you. Quite the contrary! Your enrollment simply shows that you stand ready, when called upon, to do a particular job for a particular wage in a particular place. Everything will be in readiness for you, and you will lose no time.

And so highly does the Government think of your services that you are placed in a deferred class in the draft, as long as you are working on ships. The War Department, by arrangement with the Emergency Fleet Corporation, accepts shipyard work as a substitute for military service. That's how important Uncle Sam considers ship building and the men engaged in it.

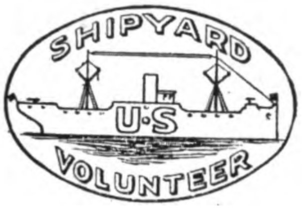
"But," you say, "I've never worked on shipbuilding."

That's exactly why Germany thinks that America cannot build ships. Germany knows that there are not enough men in America who have actually worked on ships to make more than a tenth of the ships we need if we are to do any fighting worth while.

Here is where you American workmen can fool the Kaiser.

Ships are not things of mystery; they are merely big buildings afloat—the product of everyday skill and industry—and the American Mechanic (hats off to him) can build them.

Familiar trades—**your trade**—are the ones that build ships; and almost all trades are represented. Two-thirds of the occupations used in shipbuilding are common to other industries, like boiler making, car building, bridge building, carpentering, machine shop work, etc. The list given later indicates some of the classes needed. Read it carefully and see how you qualify.



**This Is Your Badge of Honor**
**Wear It Proudly**

If you possess the right sort of training now is the time to rally around this movement and wear a Badge of Honor. This button, issued by the United States Shipping Board, shows that the wearer, through enrollment in the United States Shipyard Volunteers, has placed the welfare of the Nation above all else and stands ready by his labor to help throw across the seas a bridge of ships by which the armies of the United States can pass to do their duty on the fields of France.

To wear this button is a sign of distinction. It truly stamps the owner as the **man of the hour** in whose hands rest the happiness and security of every man, woman and child in this country.

Come on men—250,000 of you! Your Government is asking that you answer the rattle of German machine guns with the rattle of the riveter. It is asking you, for the present, to prove that you are the marrow of Americanism by going on record with an expression of your willingness to help build ships where you are needed. And it meets you half-way with good wages and deferred class in the draft with all honor.

Can you turn a deaf ear to the call? Where can you qualify in the following list?

---

Acetylene and electrical welders
Asbestos workers
Blacksmiths
Anglesmiths
Drop-forge men
Flange turners
Furnace men
Boiler makers
Riveters
Reamers
Carpenters
Ship carpenters
Dock builders
Chippers and calkers
Electrical workers
Electricians
Wiremen
Crane operators
Foundry workers
Laborers, all kinds
Loftsmen
Template makers
Machinists and machine hands, all sorts
Helpers
Painters
Plumbers and pipe fitters
Sheet-metal workers
Coppersmiths
Shipfitters
Structural iron workers
Riveters
Erectors
Bolters up
Other trades
Cementers
Crane men

## Clip the Coupon and Get the Full Story

**Edward N. Hurley, head of the United States Shipping Board, is the mouthpiece of Uncle Sam in this call for shipyard volunteers. He has complete information on hand, ready to mail you, regarding method of enrollment and other details you may want to know. The coupon below is here for your convenience in writing. Don't delay. Fill in the information asked for, clip and mail. Your action in this matter will bring you full particulars.**

**Show that you are interested by doing this now, while the coupon is before you.**

---

**Edward N. Hurley, Chairman,**
**U. S. Shipping Board,**
**Washington, D. C.**

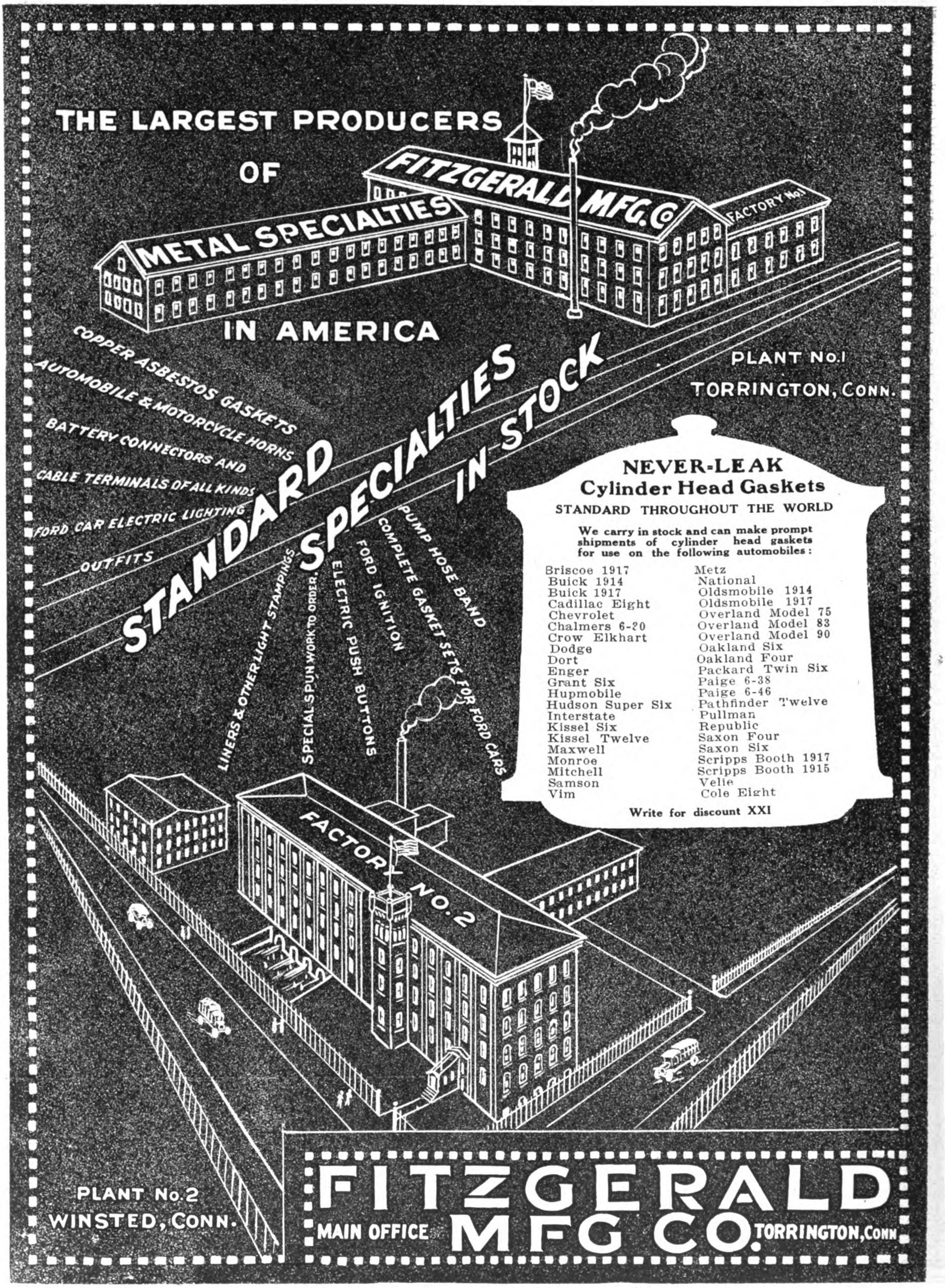
I wish you would send me at once further information, telling me how I can enroll as a member of the U. S. Shipyard Volunteers of the Public Service Reserve for employment in shipyards and so help win the war.

My Trade is..............................................................................................

My Name is..............................................................................................

Street Address..........................................................................................

Town.............................................................. State.....................................



THE LARGEST PRODUCERS
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METAL SPECIALTIES
IN AMERICA

PLANT No.1
TORRINGTON, CONN.

COPPER ASBESTOS GASKETS
AUTOMOBILE & MOTORCYCLE HORNS
BATTERY CONNECTORS AND
CABLE TERMINALS OF ALL KINDS
FORD CAR ELECTRIC LIGHTING
OUTFITS

STANDARD SPECIALTIES IN STOCK

LINERS & OTHER LIGHT STAMPINGS
SPECIAL SPUN WORK TO ORDER.
ELECTRIC PUSH BUTTONS
FORD IGNITION
COMPLETE GASKET SETS FOR FORD CARS
PUMP HOSE BAND

## NEVER-LEAK
## Cylinder Head Gaskets

STANDARD THROUGHOUT THE WORLD

**We carry in stock and can make prompt shipments of cylinder head gaskets for use on the following automobiles:**

Briscoe 1917
Buick 1914
Buick 1917
Cadillac Eight
Chevrolet
Chalmers 6-20
Crow Elkhart
Dodge
Dort
Enger
Grant Six
Hupmobile
Hudson Super Six
Interstate
Kissel Six
Kissel Twelve
Maxwell
Monroe
Mitchell
Samson
Vim
Metz
National
Oldsmobile 1914
Oldsmobile 1917
Overland Model 75
Overland Model 83
Overland Model 90
Oakland Six
Oakland Four
Packard Twin Six
Paige 6-38
Paige 6-46
Pathfinder Twelve
Pullman
Republic
Saxon Four
Saxon Six
Scripps Booth 1917
Scripps Booth 1915
Velie
Cole Eight

**Write for discount XXI**

PLANT No.2
WINSTED, CONN.

**FITZGERALD**
**MAIN OFFICE MFG. CO. TORRINGTON, CONN.**

# U·S· Trucks

U S
MOTOR FLOATING POWER PLANT TRUCKS

# *Come In-Now!*

## Sell the Coming Truck

You know what progress U. S. Truck made during the past year.

You know how its dealers—even the new ones in the new territories—cleaned up.

The coming year will see ***more*** and ***faster*** progress.

Business everywhere is going to flow in bigger volume. The usual means of transportation are to be more congested.

Truck service is to be absolutely necessary.

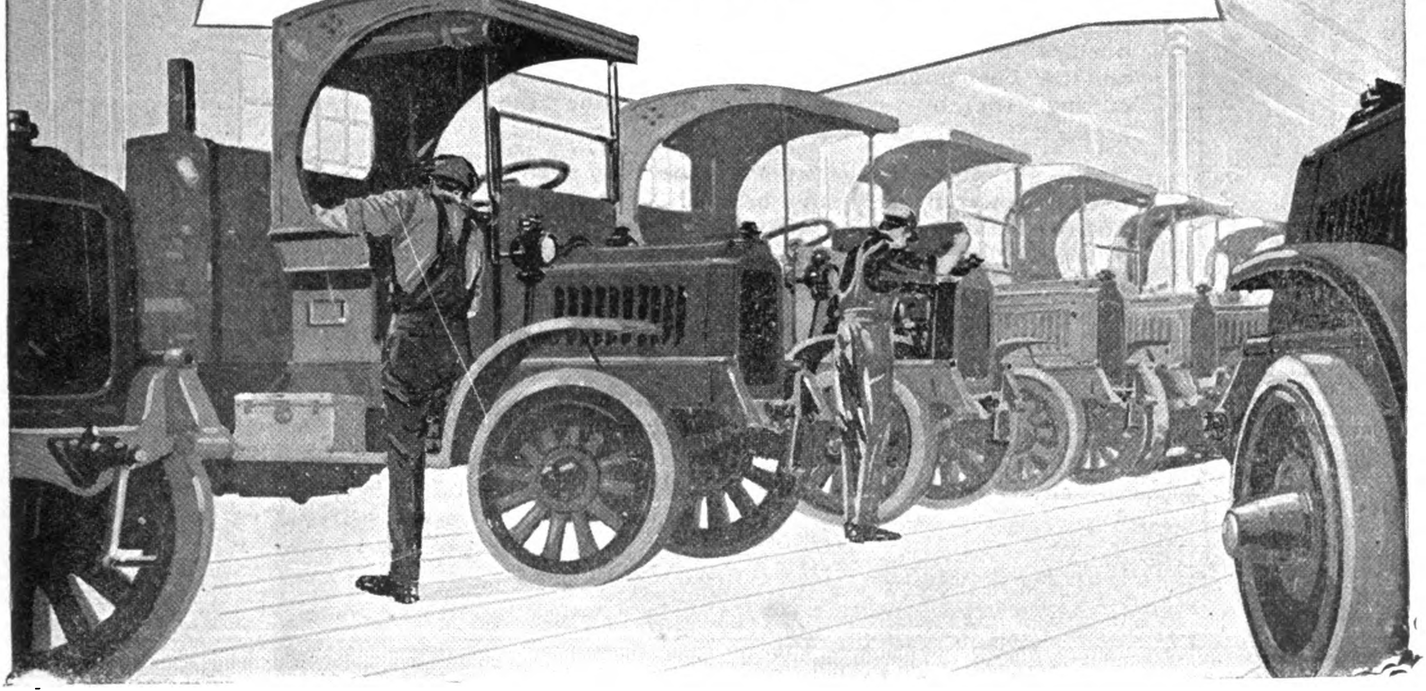
Get in now and be ready to handle your share of this business. Sell the "coming" heavy duty truck—the one that is coming fastest.

Big capital, a high grade thoroughly cooperative organization, the biggest factory in the country devoted to heavy duty trucks—all these are behind the U. S. line.

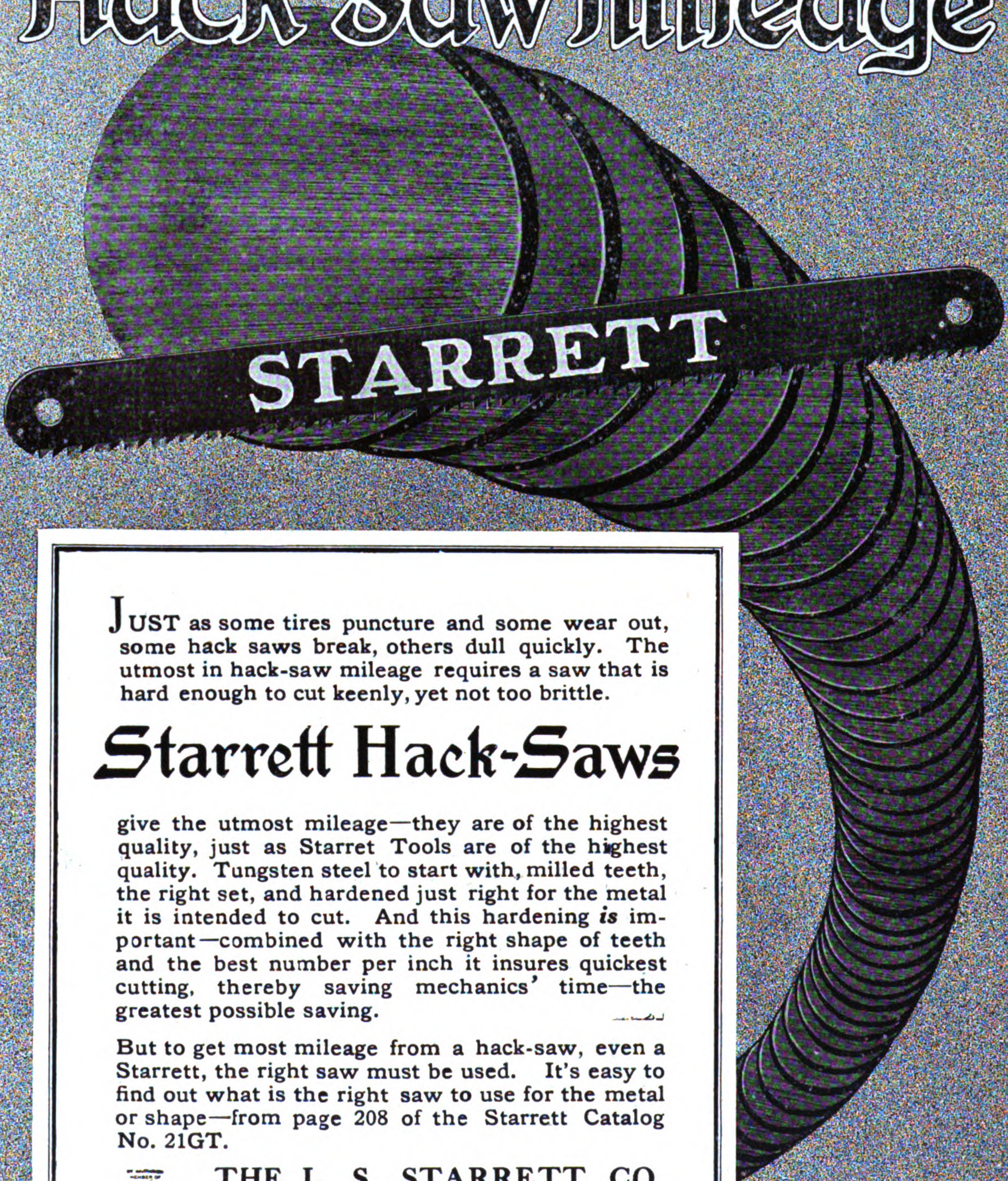
Come in now! Come in and win!

Worm Drive 2½, 3½ and 5 ton.
Chain Drive 2½ and 3½ ton.

**The United States Motor Truck Co.**
**CINCINNATI**



# Hack Saw Mileage



JUST as some tires puncture and some wear out, some hack saws break, others dull quickly. The utmost in hack-saw mileage requires a saw that is hard enough to cut keenly, yet not too brittle.

## Starrett Hack-Saws

give the utmost mileage—they are of the highest quality, just as Starret Tools are of the highest quality. Tungsten steel to start with, milled teeth, the right set, and hardened just right for the metal it is intended to cut. And this hardening *is* important—combined with the right shape of teeth and the best number per inch it insures quickest cutting, thereby saving mechanics' time—the greatest possible saving.

But to get most mileage from a hack-saw, even a Starrett, the right saw must be used. It's easy to find out what is the right saw to use for the metal or shape—from page 208 of the Starrett Catalog No. 21GT.

**THE L. S. STARRETT CO.**
The World's Greatest Toolmakers
ATHOL, Mass.
NEW YORK LONDON CHICAGO

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STARRETT
HACK SAWS
CUT QUICKER
LAST LONGER

The ACCESSORY and GARAGE JOURNAL

Devoted Exclusively to the Automobile Trade and Allied Interests.

VOL. VII. PAWTUCKET, R. I., FEBRUARY, 1918 No. 10

# World's Greatest Motor Car Show At Boston

## Wonderful Exposition of Passenger Cars, Commercial Vehicles and Accessories by Over 350 Exhibitors Amid Beautiful Scenic Setting in Florentine Style—Annual Trade Gatherings Will Be Numerous.

BOSTON'S big automobile show, which opens in the Mechanics' Building, Huntington avenue, on March 2, under the auspices of the Boston Automobile Dealers' Association and the Boston Commercial Motor Vehicle Association, will this year lay claim to a third point of superiority as a motor car exhibition. In addition to being the largest display of motor cars, parts and accessories combined in the world, and, incidentally the largest retail market for cars and parts, over $4,000,000 worth having been disposed of in one week, it will set a new mark from an artistic point of view.

The setting for the show is beautiful and dazzling. The wealth of color and the maze of multicolored lights combining the highest possible art with the surroundings, appropriate both as a background as well as forming a beautiful decorative ensemble. The designer's subject for the 1918 show in the grand hall is described as a "Florentine fete."

The magnificent scenic work is the production of the leading men of the country from original designs. From the immense procenium arch and tormentors, the designer has worked out a beamed effect of the ceiling that is altogether different from anything previously attempted. All the details are in Florentine style and in wealth of color and technique are superior to the decorations that have gone before.

The balcony front presents a repeated design of Florentine carving in dull gold and base reliefs, between which are decorative lamps and garlands of the Italian order, backed by rich old rose fabrics. The rear balcony is rendered in a sloping garden effect, studded with rich green sward and bright floral beds.

On either side of the main aisles are bronze gates with semi-circular tops some 12 feet in height. All are in fret work of old bronze with beautifully modeled relief ornaments, flanked by corner posts, surmounted by lofty electroliers. The names of the exhibitors are inscribed on the portals. Between the gates the native trees of Sunny Italy stand out in full bloom.

**Chester I. Campbell, Manager of the 16th Annual Boston Automobile Show.**

Few changes are to be noted in the models to be shown, but refinements are to be seen in many instances. Despite increases in prices of cars the present price is about $100 less than the average of three years ago.

A prominent mechanical change is the increase in average wheelbase from 113¼ to 120¾ inches. Another is the enlarged engine size, the average piston displacement now being 269 cubic inches as against 222 last year. Because of the war many of the anticipations of a year ago have not been realized, but each model to be exhibited has some interesting points about it to hold attention.

A canvass of the exhibits will bring out the fact that this year, perhaps as never before, devices and attachments whose especial function it is to make the maintenance of an automobile a more economical proposition, are a most conspicuous feature. They stand for sane economy and the elimination of waste. The exhibitors represent the cream of the accessory manufacturing field.

Devices that tend to improve carburetion and conserve gasoline hold a particular interest. Within the last two or three months a number of new carburetors, primers, condensers, engine heaters, etc., have made their appearance upon the market and they all hold some features which will be of more than passing interest to the average motorist. Carburetors using the heavier grade fuels, especially kerosene, are becoming more numerous.

Many additions recently have been made to the large number of devices and attachments that have been produced to further the comfort of the car owners.

There will be 56 different makes of motor trucks, ranging from a light delivery wagon to the huge 10-ton trucks. The truck display will be the last word in commercial vehicles. All of the standard makers will have exhibits and many devices that mean economy in operation or labor will be shown. There will be a vehicle for every kind of commercial use.

Manager Chester I. Campbell has arranged a number of features during show week. On Monday at the Brunswick Hotel, E. Leroy Pelletier, one of the most noted writers of automobile advertising copy, will talk to 1000 members of the trade at a luncheon. It will undoubtedly be a lively affair.

Thursday night, March 7, will come the annual "Auto Round-Up." This is also scheduled for the Hotel Brunswick and the affair will be limited to 1000. Scores and scores of other lunches will be held during the week. The cafes and hotels have arranged special programs for the visitors.

# *General Motors to Buy Chevrolet*

## Increase in Capital to $200,000,000 Recommended to Finance Proposed Merger

THE most stirring and interesting announcement of the year in the motor industry was made following a meeting of the directors of the General Motors Corporation in New York. The fact was brought out that the Du Pont interests, together with W. C. Durant, had acquired a large and controlling interest in the General Motors company and that the directors had recommended an increase in the total capitalization from $102,000,000 to $200,000,000 preparatory to taking over the Chevrolet Motor company, which will establish the company as the largest in the world engaged in making motor cars in point of capital and second only to the United States Steel Corporation in this respect.

President W. C. Durant, president of the General Motors and the Chevrolet Motor company, will continue as head of the two companies. E. I. Du Pont-De Nemours & Co. are now represented on the board of directors of the General Motors Corporation by Messrs. J. A. Haskell, J. J. Raskob, P. S. Du Pont, Irenee Du Pont and Henry F. Du Pont. The last two named directors were elected Feb. 21. Mr. H. M. Barksdale, vice president of E. I. Du Pont-DeNemours & Co., is a director of the Chevrolet Motor company. The majority of directors of the General Motors Corporation will continue to consist of W. C. Durant, chairman, and the managers of the principal departments of the company, and other men long identified with Mr. Durant in the development of the huge motor car interests represented in the corporation. These men are: W. P. Chrysler, manager of the Buick Motor Co.; R. H. Collins, manager of the Cadillac Motor Car Co.; W. L. Day, manager of the General Motors Truck Co.; Mr. Haskell, E. Ver Linden, manager of the Olds Motor Works, and F. W. Warner, manager of the Oakland Motor Car Co. Irenee Du Pont and Henry F. Du Pont were elected as members of the finance committee, which is now composed of these gentlemen, together with the following: J. J. Raskob, chairman; P. F. Du Pont and Messrs. Durant, Haskell and McClement. Louis G. Kaufman resigned as a member of the finance committee, of which he was chairman, but retains his position on the directorate.

President Durant, following the meeting, announced that the increase in capital stock as recommended to the stockholders provided for an authorized capitalization of $50,000,000 six per cent. preferred stock and $150,000,000 common stock. At present there is authorized $20,000,000 of the preferred stock and $82,600,000 common. It was also recommended to the stockholders that an offer be made to purchase the assets of the Chevrolet Motor Co., exclusive of its stock holdings in General Motors Corporation, paying therefore 282,684 shares of the common stock of the General Motors Corporation. This stock, together with the 450,000 shares of General Motors common stock now in the treasury of the Chevrolet Motor Co. will amount to 732,684 shares, or one and one-seventh shares of General Motors Corporation common stock for each share of Chevrolet Motor Co. stock now outstanding.

General Motors stockholders will hold their next meeting on March 20, when it is expected that favorable action will be taken on the recommendations of the directors.

# *Big Increase In the Production of Jordan Cars*

### Company Will Increase Capital $200,000 to Finance Expansion of Manufacturing Facilities.

A 50 per cent. increase in the production of Jordan motor cars, made possible by the immediate addition of $200,000 to the capital, and the placing of Jordan stock on a definite dividend paying basis is part of a plan announced at a meeting of the board of directors following the annual stockholders' meeting held in Cleveland.

At the national automobile shows it became apparent that the sales possibilities of the Jordan company had reached a point where, unless provision could be made for increased production, the growing demand could not possibly be supplied. During the past year the company did a business of approximately $3,000,000 on a working capital of $300,000, producing and selling more than 2000 Jordan cars. In the last quarter of 1917 Jordan earnings amounted to 16.7 per cent. on the capitol, or the equivalent of 66.8 per cent. for the year.

The new plan was suggested to the board of directors by prominent Cleveland interests who have watched carefully the development of the Jordan company, and who are aware of the fact that manufacturers and dealers have been unable this winter to accumulate the usual stocks of cars for spring delivery. The plan provides for the sale of $200,000 of preferred stock now in the treasury, with one-half share of common stock given as a bonus with each share of preferred. This stock will be fully paid and non-assessable. The preferred stock now held by the original stockholders, together with the new preferred issue, will be placed on a 7 per cent. annual dividend basis, to be paid quarterly. The new issue will first be formally offered to the present stockholders, who may subscribe pro rata to their present holdings. In the event that the issue is not all taken by them it will be then available to new subscribers.

Control of the Jordan company remains in the hands of Mr. Jordan and his working associates.

### MAXWELL DIVIDEND ON PREFERRED PAID IN SCRIPT.

The Maxwell Motor Co. has declared the regular quarterly dividend of 1¾ per cent. on the first preferred stock, payable in script, to be dated April, 1918, and due April 1, 1920, with interest at six per cent. per annum, payable semi-annually, April 1 and Oct. 1, and subject to redemption at any time at the option of the company. Dividend certificates will be delivered April 1, 1918, to holders of first preferred stock at the close of business March 15. It was stated that while the earnings of the company are satisfactory the large amount of work on hand under contract with the government renders it advisable for the company to conserve its cash resources since made on those issues.

### REGAL MOTOR COMPANY HAS TEMPORARY RECEIVER.

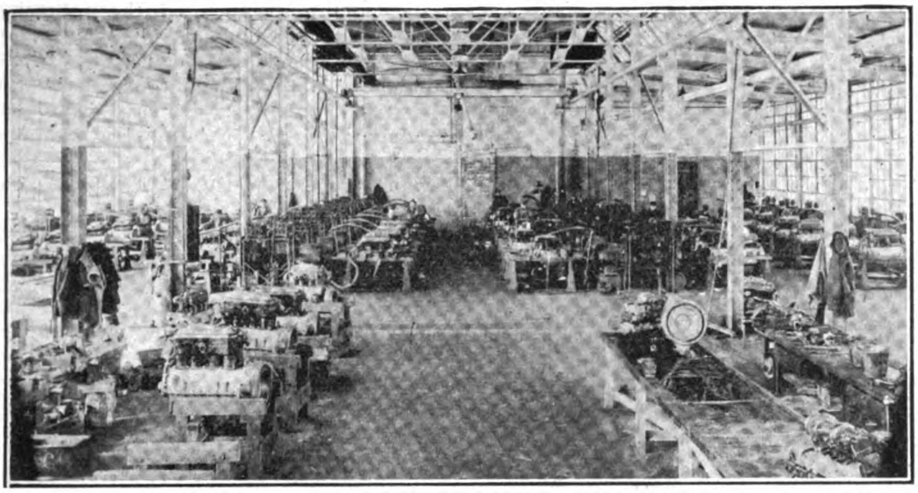
The Security Trust Co. of Detroit has been appointed receiver for the Regal Motor Car Co. and under a bond for $50,000 the company was authorized to continue business. The latest available statement of the company's condition shows a wide margin of solvency, with assets of approximately $1,500,000 as a going concern and liabilities of about $750,000. The value of the company's real estate and plant is estimated at $800,000.

# *Ford Car Prices Are Advanced $90.00*

### Touring Car now $450, Runabout $435, and Chassis Has Been Raised $75 in Price to $400.

The Ford Motor Co. has announced an increase in price of $90 on the touring and runabout models and $75 on the chassis. The new prices, which have gone into effect, will be as follows: Touring, $450; runabout, $435; chassis, $400.

No announcement was made by the company in the nature of an explanation of the advance, but it is generally understood that the rising materials markets have made the increase imperative. The company has made a substantial reduction in its output, the present production totaling about 1600 cars a day, representing a curtailment of about 40 per cent.



**One Corner of Testing Department of the Buda Co., Harvey, Ill., Showing Equipment of 47 Sprague Dynamometers for Testing Engines.**

# *News of the Car and Parts Manufacturers In Brief*

## Happenings Among the Leading Manufacturers in the Motor Vehicle Industry and Allied Lines, Present and In Prospect

**The Tuthill Spring Co.** of Detroit, Mich., has leased an additional building to be used exclusively for Ford fronts, Titanic types. The company distributes the Tuthill Titanic lubricated springs.

**National Motor Car and Vehicle Corporation**, Indianapolis, Ind., announces that on account of the increased cost of raw materials, parts and labor, the company has been compelled to increase the price of all six and 12-cylinder models. The new prices, which go into effect immediately represent an increase of $155 in the cost of the seven-passenger touring car, four-passenger roadster and four-passenger phaeton, the revised prices being $2150 and $2750 for the six and the 12, compared with $1995 and $2695 at which they were formerly listed. The price of the six-cylinder sedan remains at $2820, while the same body of the summer-winter convertible type, mounted on the 12-cylinder chassis, sells for $3420.

**The Columbus Varnish Co.**, Columbus, O., has increased its capital stock to $400,000. This was voted at the annual meeting of the directors. The company not only makes varnishes for all purposes, but are the sole makers of Peerless automobile specialties.

**The Mason Tire and Rubber Co.**, Kent, O., reports for the first quarter of 1918 a sales increase of 700 per cent. over the same quarter of 1917. The sales for January were the largest in the history of the company. A large force of men is at present at work installing the new calenders and when erected and in operation will give the plant a daily production of 1500 tires.

**The Republic Rubber Co.**, Youngstown, O., is having plans prepared for the construction of a three-story factory building to cost $300,000.

**The Topp-Stewart Tractor Co.**, Clintonville, Wis., has purchased two water power sites on the Embarrass river and will erect a hydro-electric plant. The installation will provide electric power for the Topp-Stewart plant.

**The Four Drive Tractor Co.**, Big Rapids, Mich., will enlarge its plant to double its capacity. The following officers have been elected: President, Jotham Allen; vice president and sales manager, J. C. Jenkins; treasurer, Albin Johnson; secretary and manager, H. E. Frederick.

**The Sioux City Tire and Manufacturing Co.**, Sioux City, Ia., will double its capacity within the next few months. The plant has only been in operation three months and is turning out between 60 and 100 tires a day.

**The Wisconsin Motor Manufacturing Co.**, Milwaukee, Wis., announces the completion of an addition to the plant used mainly for the assembly of engines. The addition includes a sub-assembly and final assembly department in addition to shipping department and stock room. The total floor space is 43,520 square feet. The capital has been increased to $1,000,000.

**The H. H. Franklin Manufacturing Co.**, Syracuse, N. Y., manufacturer of automobiles, has received a contract from the Rolls-Royce Co., Derby, England, for parts for the Rolls-Royce airplane engine. A portion of the plant will be used for the new work and the present working force will be increased by over 1000 men to work exclusively for engine part manufacture.

**The Dorris Motor Car Co.**, St Louis, Mo., has acquired the plant of the Mogul Motor Truck Co. The company has also acquired as a building site a lot adjoining the plant, 200 by 177, and plans are being made for the extension of the factory on this site.

**The No-Chain Truck Unit Co.**, St. Louis, Mo., will begin the manufacture of the Truxton trucks. The company has been manufacturing the no-chain truck unit.

**The Traffic Motor Truck Corporation**, St. Louis, Mo., has acquired a building for factory purposes. The building contains 45,000 square feet of working space. The company will make only a two-ton truck, which will sell for $1000. T. C. Brandle, Westcott and Chevrolet distributor, is president, and H. P. Mammen is general manager.

**The McCord Manufacturing Co.** has opened an office in the McLachlen building, 10th and C streets, N. W., Washington. L. A. Shepherd is in charge of the new office. The company manufactures force feed lubricators, radiators, McKim gaskets and a line of automobile, railway and power plant specialties.

**The Swanson Motor Co.**, 325 Harrison street, Davenport, Ia., has taken the agency for Denby trucks in Scott county and five other counties in Iowa and in the Rock Island County, Illinois. The company is also distributor of the Franklin car. O. C. Hardebeck, formerly with the Denby Motor Truck Co. of Des Moines, is now in charge of the Swanson company.

**The L. V. Fletcher & Co.**, New York, N. Y., manufacturers of carburetors, has opened a branch office at 790 Woodward avenue, in charge of George K. Parsons. Frank M. Eldridge, formerly of the Wallace C. Hood Service Bureau, is advertising and publicity manager.

**The Detroit Weatherproof Body Co.**, Detroit, Mich., is now producing 150 tops a day and by making over a factory unit now used for storage purposes, the production will increase its daily output to 250 tops a day.

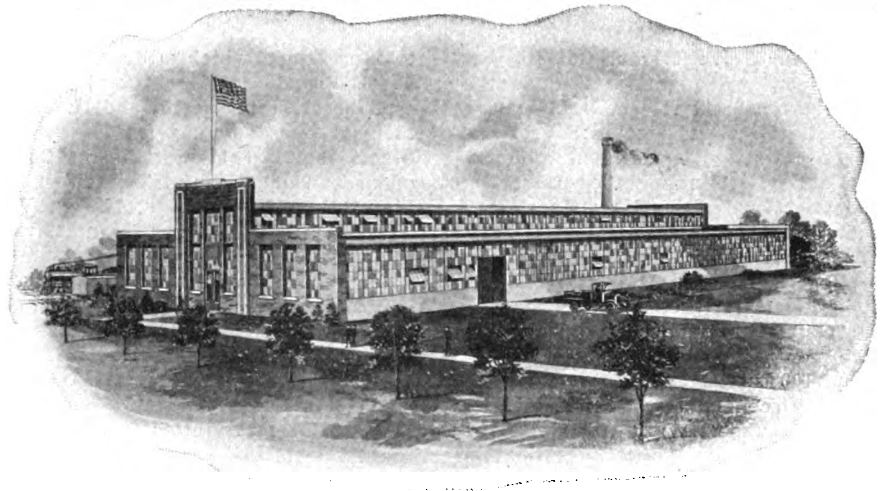
**The Nash Motors Co.**, Kenosha, Wis., reported for the period Aug. 16, 1916, to Dec. 1, 1917, profits that amounted to $2,027,783. Cash dividends paid on the preferred stock totaled $437,500, leaving a surplus of $1,590,283 for the period, which, added to $825,851 surplus as of Aug. 16, 1916, made a total surplus of $2,416,134 on Dec. 1, 1917.

**Oneida Motor Truck Co.**, Green Bay, Wis., is now located in its new factory and the capacity is being increased to 100 trucks a month. The factory is 150 by 476 feet, affording 70,000 square feet of floor space. A branch will be opened in San Francisco.

**The Muskegon Engine Co.**, Muskegon, Mich., has started manufacturing operations in its new plant, the first unit of which has been completed. This is a structure of concrete, steel and glass, with a head house two stories high, the remainder of the building one story. The floor space available for manufacturing is approximately 15,000 square feet. The general offices are on the ground floor of the head house and the engineering department is located on the second floor. The company has exceptional shipping facilities, being connected by spur track with the G. R. & I. and the Pere Marquette railroads.

**The Metz Co.**, Waltham, Mass., is planning to sell its plant to adjust its debts. It will retain one part of the group of buildings in which it will carry on government work.

**The Maibohm Motors Co.**, Racine, Wis., automobile manufacturers, in the annual report just issued show substantial progress for the nine months beginning April 1, 1917, when the company became a Maine corporation. The vehicle manufacturing business of this organization was established in 1888 as the Maibohm Wagon Co.


New Plant of the Muskegon Engine Co., Muskegon, Mich., Makers of Muskegou [illegible] Trucks, in Which Production Was Recently Begun.

The annual statement for the period ending Dec. 31, 1917, follows:

| | |
|---|---|
| ASSETS. | |
| Cash | $15,832.57 |
| Outstanding drafts on cars in transit, accounts receivable, notes receivable | 18,584.84 |
| Inventories | 67,281.46 |
| Deposits on material | 7,071.87 |
| Deferred to operation | 178,225.59 |
| Machinery and equipment | 41,345.40 |
| Patterns | 56,247.28 |
| Trade marks and good will | 50,000.00 |
| Total | $434,589.01 |
| LIABILITIES. | |
| Current invoices and accrued payroll | $123.82 |
| Reserve for war tax on sales | 348.90 |
| Sales contingent fund | 1,062.12 |
| Dealers' deposits | 3,050.00 |
| Capital stock issued and outstanding | 417,710.00 |
| Surplus | 12,294.17 |
| Total | $434,589.01 |

Officers and directors elected for 1918 are: H. C. Maibohm, president and treasurer; T. W. Cushing, vice president and secretary; W. C. Maibohm, works manager; Albert Mohr, Chicago, and Lloyd McGinnis, Canton, Ill., directors.

Commenting on the showing for the period, President H. C. Maibohm says: "The company's net earnings for the period, represented by the surplus item on its balance sheet, are not only satisfactory, but rather remarkable when the unusual features that burdened the automobile industry in 1917 are considered. The difficulty of obtaining materials, transportation troubles and the bad selling season due to the nation's entry into the war were the chief handicaps.

"The outlook for 1918, however, is extremely bright.

"A two-story factory addition used exclusively for dry kilns and baking ovens has materially increased this company's production facilities to the extent that a bare frame can now emerge a complete car with five coats of paint within a space of nine hours."

**The Brooks Skinner Co., Inc.**, Quincy Point, Mass., has taken over the plant of the Bradley Portable House Corporation, Randolph, Mass. The factory is a four-story building, with a total floor area of 40,000 feet and is located on the New York, New Haven and Hartford railroad, with spur track facilities. With these two factories the company will manufacture more than 2000 complete buildings per year. These buildings will include garages, bungalows, camps and hospitals.

**The La Crosse Tractor Co.**, La Crosse, Wis., has increased its capital stock to $2,500,000 to provide for the rapid growth of the company.

**The Buda Co.**, Harvey, Ill., which recently placed in operation a new building devoted to assembling and testing truck and tractor engines, has started work on another new structure, a step which has been made necessary by the company's rapidly expanding business. This latest structure will be four stories high, of reinforced concrete construction with brick walls.

**The Prest-O-Lite Co., Inc.**, Indianapolis, Ind., has appointed the following firms and individuals as distributors of acetylene products: Compton Auto Co., Compton, Cal.; Thresher Motor Supply Co., Gridley, Cal.; Needles Garage and Supply Co., Inc., Needles, Cal.; Motor Electrical Specialty Co., 1135 Post street, San Francisco, Cal.; Meyers Garage, corner First and Garfield, Belvidere, Ill.; Seely & Whitmore, 438 Cherry street, Huntington, Ind.; The Tire Shop, 2307 Atlantic street, Atlantic City, N. J.; Foy & Shemwell, Lexington, N. C.; C. E. Crauder, Gratis, O.; Frank A. Duff, 26 N. Duke street, York, Pa.; Frank Wilcox, Vancouver, Wash.; Industrial Engineering Co., 122 E. Lincoln street, Shamokin, Pa.; M. N. Stewart Co., 414 E. Market street, Aberdeen, Wash.; Bond Auto and Plumbing Co., Tennessee street, Florence, Ala.; Freeman & Aldred, Park Place, Morristown, N. J.; Miller Auto Co., Vicksburg, Miss.; S. M. Hottenstein, Towanda, Pa.; The Battery and Auto Station, 1051 Broad street, Augusta, Ga.; G. W. Hawkins Auto Supply Co., 918 Rusk street, Houston, Tex.; Youngstown Storage Battery Co., Holmes and Commerce streets, Youngstown, O.; Durham Buggy Co., Durham, N. C.; Auto and Gas Engine Works, Elizabeth City, N. C.; Sutton Motor Co., 135-137 Gillespie street, Fayetteville, N. C.; Fuilford Motor Car Co., 105-7-9 S. Cavie street, Greenboro, N. C.; Auto Battery Co., Spencer, N. C.; Washington Motor Car Co., Washington, N. C.; The Auto Repair Car Co., corner Third and Elm streets, Winston-Salem, N. C.; Missouri Valley Motor Co., Bismarck, N. D.; F. W. Turner, Willard and Second avenue, E., Dickinson, N. D.; B. B. Bennett, Drake, N. D.; Fargo Plumbing and Heating Co., 123 Broadway, Fargo, N. D.; Dakota Motor Sales Co., Minto, N. D.; Stice-Hansen Motor Co., Williston, N. D.

**Motor Parts Co.**, Philadelphia, Pa., has removed to 847-49 Broad street. The building contains more than 25,000 square feet, this is the main office of the company, with branches at Buffalo, Boston and Springfield, Mass.

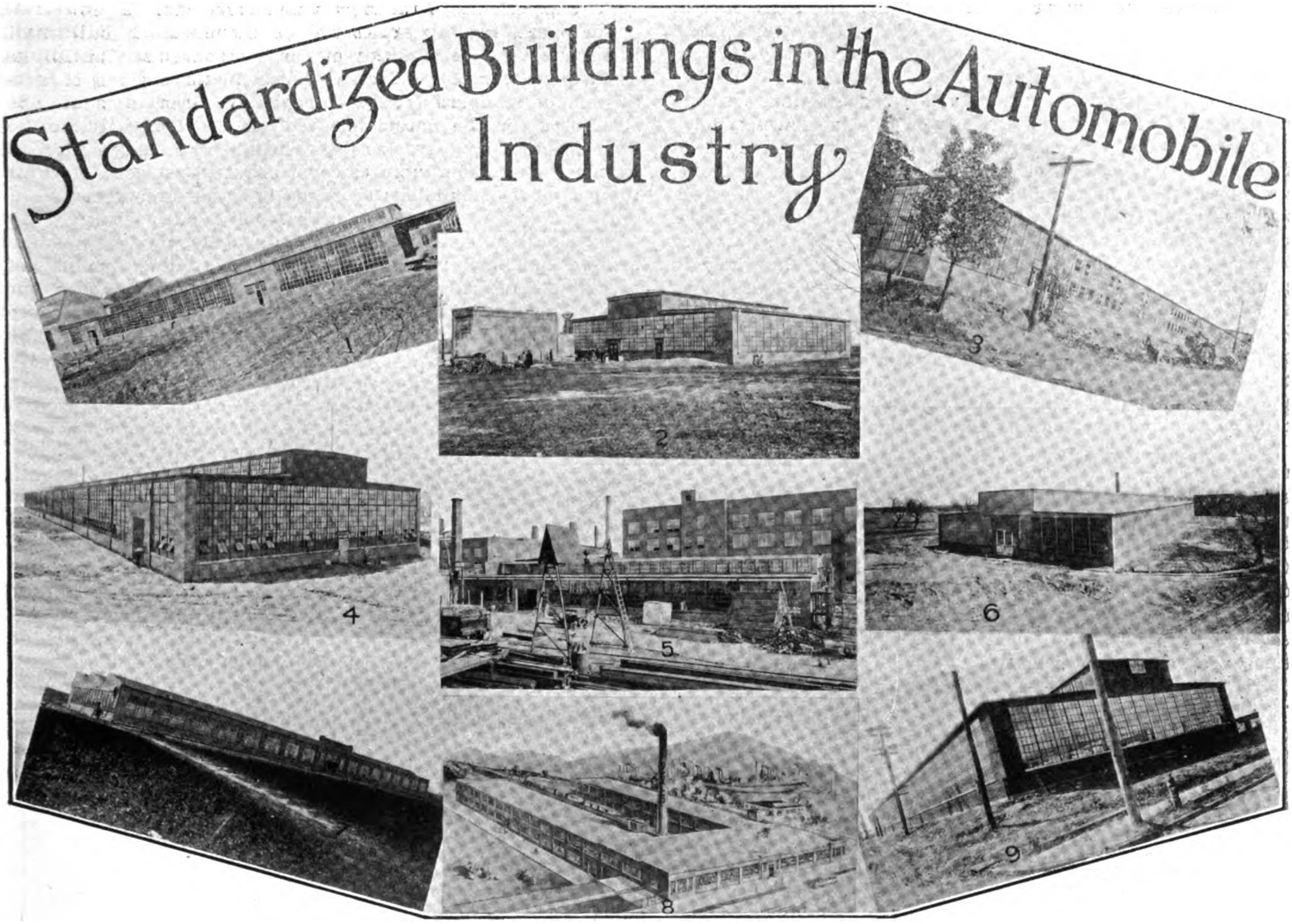
**The Forge Products Co.**, Ann Arbor, Mich., has incorporated with a capital stock of $350,000 to manufacture high speed steel forgings for tool work and automobile parts. The directors are: C. F. Simmons, C. W. Goodside, J. C. Cummings, Henry Winenan. L. J. Hoover is president.

**The Columbia Motor Co.**, Detroit, Mich., makers of the Columbia six-passenger cars, has received a big government order for trailers to be shipped to France.

**The Chandler Motor Co.**, Cleveland, O., manufactured 15,000 cars in 1917. The company shows net earnings of about 34 per cent. on the $7,000,000 outstanding stock.

**The Townsend Manufacturing Co.**, Janesville, Wis., makers of gas engines, tractors and power machinery, is erecting two shop additions. This was made necessary on account of the several large orders received from its distributors in the United States, Canada and Europe.

# Standardized Buildings in the Automobile Industry



**Notable Factories of Standardized Construction: 1, Cleveland Tractor Co., Cleveland, O.; 2, Anderson Tire Manfacturing Co., Washington, D. C.; 3, Jackson Rim Plant, Jackson, Mich.; 4, Pullmore Motor Truck Co., Newcastle, Pa.; 5, Torbensen Gear and Axle Co., Cleveland; 6, Fox Machine Co., Jackson, Mich.; 7, S. S. E. Co., Philadelphia, Pa.; 8, Silvex Co., South Bethlehem, Pa.; 9, Robert Hassler, Inc., Indianapolis, Ind.**

WHEN the country went to war items appeared daily in the press of new and old concerns that were planning the erection of large manufacturing plants for use in turning out the great amount of supplies necessary for our army and navy. Many people marveled at these announcements being under the impression that the erection of a plant was a matter of at least six months or a year. This led to the belief that protracted delays would follow that would be injurious to our cause. Few understood that construction methods have marched on apace with other lines of industry and that the modern manufacturing building is erected much after the fashion of the motor car, or on the plan of progressive assembly, employing standardized units.

The standardized building is a product of American progressiveness. In the construction of factories and other large industrial buildings it has long been possible to have the steel work come upon the site fabricated in fabricating shops by those who are specialists in this line with all of the special tools and labor saving devices at their disposal. Recently however, advanced builders have gone further than the steel assembly in the laying down of materials ready for fitting together a factory structure much as a child would build his towering structures in the play room with erector toys.

The construction of standardized buildings relieves the mind of the factory operator from the multitude of detail that goes with such work, reducing his problems practically to those of time, the assembly and installation of equipment only, for all the problems of engineering, material supply, punching, riveting, erection, inclosing, finishing and delivering are signed, sealed and settled when the order is given. The type of building which the standardized factory builder erects provides for the use in all places of conventional factory shapes, plates and units, subject to rules, inspection and survey of an agreed authority, both as to quality and material, dimensions and other matters.

### How It Is a Commercial Possibility.

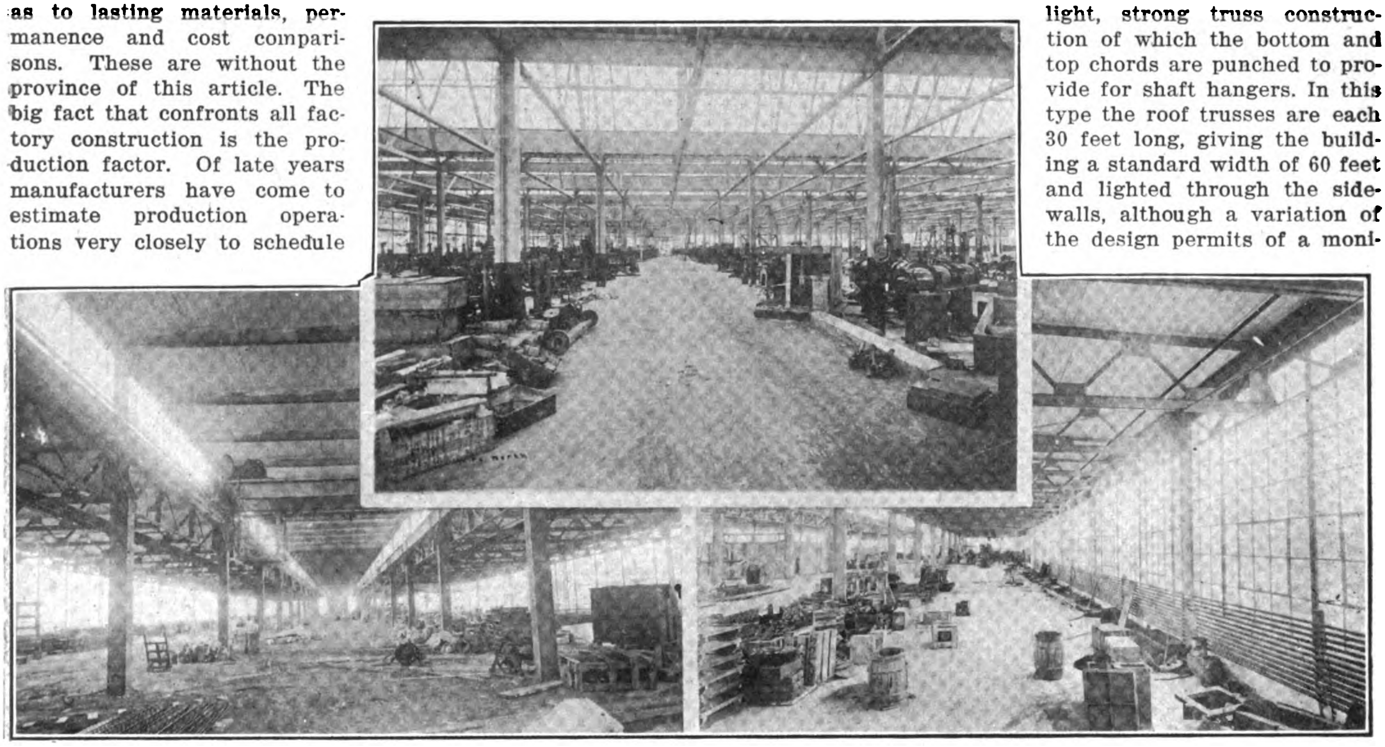
The building as thus constructed is a commercial possibility only because identical buildings will suit the purposes of widely different classes of manufacture. They are a possibility simply because mechanical manufacture today involves mainly the useful occupation of certain amounts of floor area, and because careful analysis of industrial plants has conclusively proved that no matter how highly specialized certain portions of these plants may be, there is a striking similarity in 30 to 40 per cent. of the floor space. Hence manufacturers are growing alive to the fact that not every building must be treated as if it were an entirely individual project, but may be evolved from fabricated material of fixed dimensions in quicker time and at lower cost, because the manufacturers know full well that in their own lines that has been the effect of standardization.

It is significant that the growing list of standardized buildings includes numerous factories for the production of automobiles and accessories, and also sales rooms. The automobile industry is itself highly standardized both in the parts of its product and in the assembling of the same. Big automobile factories make the most intensive use of the progressive assembly in building motor cars. Now the builders come along with similar methods and build factories for the automobile makers in multiple units on a combination of practically the same two principles. Both industries are indebted to the makers of popular and inexpensive American watches, who are credited in manufacturing annals as being the originators of progressive factory assembly. Thus the automobile being in itself the epitome of standardization, it is not in the least strange that the structure in which it is made be rendered just as efficient through the same sort of process.

In looking over the illustrations that accompany this article, the sameness of exteriors and interiors might readily deceive one to believe that these utility constructions are commonplace. While the reduplication of a set design may have the disadvantage of monotony when it comes to a matter of artistic assembly, for a civic centre, perhaps, it is to be remembered that these buildings are scatterd far and wide over the land, that they house the hands of thousands of laborers who at forge, lathe and anvil, are forging Liberty bonds into every car and automobile accessory they help to produce.

### Motor Industry Fosters Development.

Perhaps no other industry furnishes such an excellent opportunity for the development of standardized buildings put up in successive multiples at great savings in time and expense as the automobile industry. Construction engineers may go to whatever lengths they wish in their discussions as to lasting materials, permanence and cost comparisons. These are without the province of this article. The big fact that confronts all factory construction is the production factor. Of late years manufacturers have come to estimate production operations very closely to schedule time, and the onset of the war increased this tendency at a ratio that would be found very high if it were put into figures. The builder of standardized factories steps into this breach, producing good manufacturing buildings, and does it on his own highly scientific production schedule, which brings new factory buildings to completion on or ahead of time.



Upper View Shows Installation of Machinery in the Nordyke & Marmon Plant. Pictures on Left and Right of Fox Machine Co. Plant, Showing Crane and Steel Trussing on Which Shafting Is Hung.

The erection of a permanent structure in 30 to 60 days is an especially valuable development of American building progressiveness, also for the quick rebuilding service it affords in emergencies. There have been numerous examples of this in the New Jersey munitions plants, and in the automobile industry the situation is not entirely different. There is a certain period of the year in which business is brisk and other periods in which it is slack. If a fire should happen to overtake a plant at the beginning of the busy season of the year the whole year's business would be seriously reduced. Being able to get back into a building in a hurry after a severe fire is a valuable advantage to any owner, saving in interest on the investment, retaining customers sure to be taken away by competitors during enforced suspension and delay, as well as being able to maintain a working force almost to the full strength, for if a factory is put out of business for any considerable length of time because of fire the employees find positions elsewhere and when the factory is ready to start anew a new force must be engaged.

The experience of the Austin Co., Cleveland, O., industrial builders and leading exponents of standardized buildings, illuminates the possibilities of these standardized buildings as adapted to motor industry needs. In three years of production of standard factories they have erected some 30 structures for the automobile industry, including 13 to be used as automobile truck repair sheds by Pershing's men in France. These 30 structures cover about 10 per cent. of their total number of buildings produced in these three years.

### Austin Company's Nine Types.

The Austin company manufacture nine types of standardized buildings varying in width, length and number of stories. Three simple types are built in 30 days each; four in 60 days each, while brick mills and multistory concrete buildings are built in quick time, some of them in around 90 days.

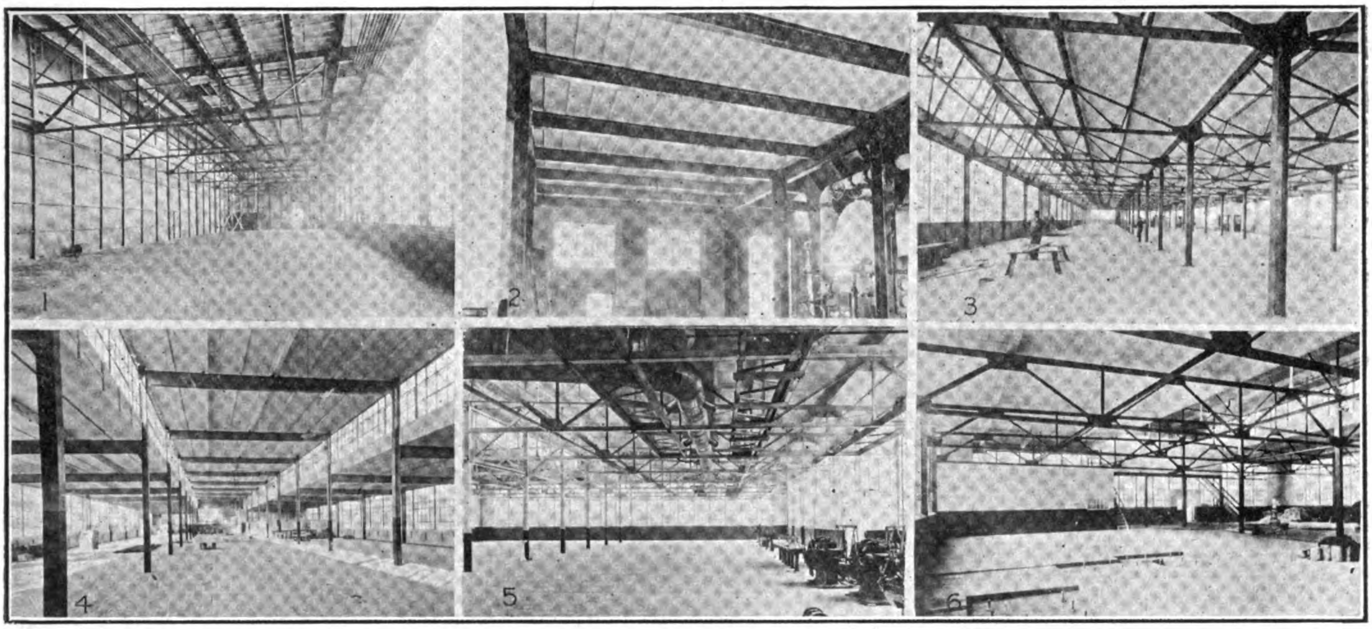
The simplest type of building in the Austin schedule, a single-story, flat roof plan, for storage or light manufacturing, is built either with solid columns and beams, or with a light, strong truss construction of which the bottom and top chords are punched to provide for shaft hangers. In this type the roof trusses are each 30 feet long, giving the building a standard width of 60 feet and lighted through the sidewalls, although a variation of the design permits of a monitor. The beams in this structure carry light shafting and a monorail system up to 1000 pounds.

In a 90 foot wide type the standardized building presents three 30-foot aisles of trussed construction or I beams. In these buildings auxiliary columns provide a carry for a traveling crane in the centre aisle, or a monorail may be carried by the roof trusses and beams. In heavy machine shops, foundries or erecting shops which set heavy machinery down this central aisle extra sets of beams carried across the centre aisle support shaft hangers.

### Favorite for Automobile Factories.

Their standard number three type has been found most adaptable to the automobile industry. In plan, the width of this model is 100 feet—the economical maximum that can be well lighted through sidewalls and one monitor, and it is built to any length in multiples of 20 feet. In section it is divided by a single line of central columns. The monitor roof is 27 feet three inches clear above the floor and is supported by a chord truss seven feet four inches in heighth, 34 feet back to back of Ls. The roof and monitor are supported by steel trusses, with 13 feet clearance above the floor. The space between exterior and interior columns is 49 feet 1½ inches from centre to centre of columns.

The specifications of this standard model, so popular with automobile manufacturers, are exceedingly interesting, fairly



**Features of Interiors: 1, Wood Block Floor, Pullmore Motor Truck Co.; 2, Long Span Gypsum Tile Roofing, Nordyke & Marmon Co.; 3, Saw Tooth Roof Truss, S. S. E. Co., Philadelphia, Pa.; 4, Monitor of Cleveland Tractor Co., Showing Excellent Lighting; 5, Overhead Construction Carrying Blower and Shaft Hangers, Robert Hassler, Inc., Plant; 6, Anderson Tire Co., Washington, D. C., Showing Ties in Floor for Machinery.**

typical of many of their designs, and are as follows:

Foundations are of concrete, one part cement, three parts sand and five parts stone.

Walls are brick below the sills, laid in cement mortar tempered with lime.

Columns are structural steel.

Sash are of steel, continuous, with factory ribbed glass; clear or wired glass substituted if desired; instead of continuous sash, brick pilasters may be introduced, 20 feet between centres.

A four-light ventilator is installed in each sash.

The roof structure consists of structural steel trusses or I beams, set horizontal to provide level suspension for the shaft hangers.

The purlins are of long leaf yellow pine, six inches by 12 inches.

The floor is of five-inch monolithic concrete; wood or other additional floor as desired.

One field coat and one shop coat of paint is placed on the structural steel and two coats of interior factory white on wood and brick.

Gutters and down spouts are not included except when ordered. Sash operator, plumbing, heating, lighting and sprinklers are furnished as ordered.

This building has only one column to every 2000 square feet of floor space. The bottom chord of each roof truss is composed of two heavy angle irons which are set back to back, an inch apart, and take bolts for shaft hangers at a panel point. Intermediate panel points are punched, providing additional struts where required.

### Saw Tooth, High Monitors, Multistory Structures.

The saw tooth building provides another type which is much used from the circumstance that it permits practically unlimited expansion in either direction, with a proportionate increase in daylight evenly distributed throughout the entire area. The standardized builders have developed a temporary panel of angle irons and asbestos covered metal for use below the windows instead of brick walls where future expansion is likely. This permits the factory owner to use the entire side wall over again when extensions are made. Long span concrete or gypsum tiles for the roof are popular in these buildings and are made on the job by the builders' workmen.

Three larger types are essentially similar in section except as to the width of the centre aisle, which may be either 42, 47 or 57 feet, with side aisles approximately 31 feet each. In plan they are 104 feet eight inches wide, 110 feet three inches wide, 120 feet two inches wide respectively by any length in a multiple of 20 feet. In each the monitor roof is supported on a peak truss 34 feet clear of the floor and a traveling crane is carried the width of the centre aisle on the aisle columns. The roofs of the wing bays are supported by trusses, with 14 feet eight inches clearance above the floor. Purlins are of steel and roofs of corrugated iron in this type of buildings, which are used by various large companies in the metal trades industries.

These standard factory builders also construct multistory structures, with steel columns and girders, or with wood beams. The lessons of intelligent repetition have been found applicable here no less than with the skeletonized structures of the ordinary single story factory. Mills with steel or wood between brick pilasters are constructed in multiples of 16x20 feet bays and quick time is feasible from ground floor to roof. Reinforced concrete buildings are also erected on standardized designs by the same builders, which in length and width may be in any multiple of 20 feet—the characteristic bay length of Austin Standard Buildings. Builders generally accept that a 20x20 foot panel is standard in flat slab design, requiring for a given load the minimum of reinforcing steel per square foot. The standard designs include both flat slab and beam and girder buildings.

### Some Typical Instances.

The two Austin buildings that would illustrate the most points of interest to automobile manufacturers and others interested in studies of standardized buildings would probably be the Jackson rim plant at Jackson, Mich., and the

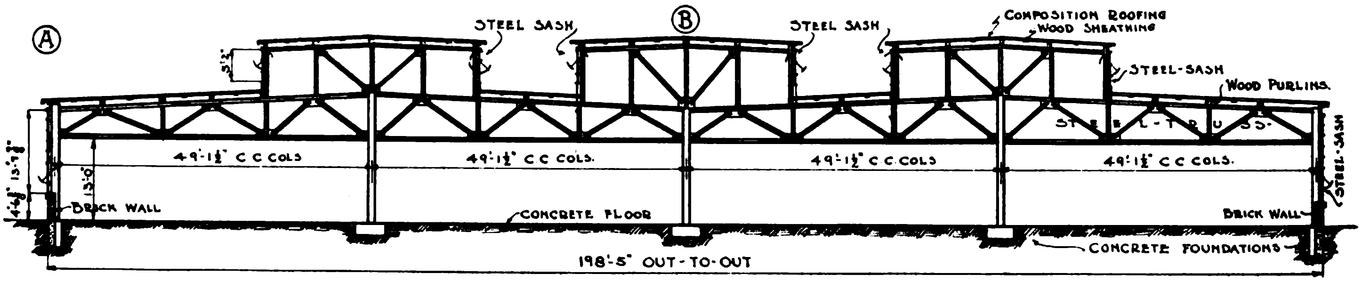
**Left, Pleasing Exterior of Torbensen Axle Co., Cleveland, O., a No. 2 Standard Building; Right, Jackson Rim Co., Office Building.**

Nordyke & Marmon plant at Indianapolis. The Jackson plant is an Austin Standard No. 3 design, measuring 100 feet by 360 feet, with monitor roof and a single line of columns down the centre. Fifty foot trusses give comparatively clear floor space. The Nordyke & Marmon building is a No. 4 saw tooth structure, 300 feet square. This was a 60 day contract.

The choice of materials is fairly well standardized. Structural steel in large quantities is carried in stock or under orders ready for immediate shipment. Wall materials—either brick or factory steel sash—are also in stock. While tile roofing is preferable, composition or wood is supplied from stock as desired.

Methods and operations: The success of Austin standard buildings is intimately associated with its organization of methods and operations. It can readily be understood that a description of this in all its ramifications and intricacies could not be undertaken within limited space. Builders crews are seen at work on every hand every day. It is detailed plans, a place for everything that makes orderly procedure possible. Just as a huge circus tent is put up and taken down the same day through system and repetition, so standardized buildings are susceptible to systematic erection—and they do not have to be taken down as the circus tent.

"There is a carpenter at every row of nails to be driven," the superintendent of a Michigan plant says of the Austin system. "The men keep abreast of each other as they advance along the rows; and each man works as though he believed that if he took time to spit the whole building operation would be delayed." Austin 30 day buildings are the result of standard operations as well as of standard design and materials. The crews follow (or rather precede, usually,) all materials to the site of the proposed building. Special men handle the very routing and tracing of all material, insuring its delivery ready for handling even in freight congestions.



**Cross Section Plan Showing How Two No. 3 Standardized Buildings Are Linked in Combination, Giving a Building 198 Feet 5 Inches Overall in Width.**

Covering, therefore, as the preceding discussion has shown, factory buildings from the simplest to the most elaborate from the standpoints of utility, stresses and materials employed, standardized buildings may be bought to order from a catalogue in the same way that an automobile or a tire pump may be obtained.

### Building Needs of the Industry.

It still remains to be said that for its buildings the automobile industry has its demands, some shared in common with all industries, some with a few others and some peculiar to itself.

The lighting, ventilation and floors are problems in common with many other industries. Through scientific study the trade is absolutely aware of the fact that working surroundings of men have a great deal to do with their efficiency as producers. The greater the light the greater the increase in the efficiency of the workers because there is less strain on their eyes, and in the monitor roof or flat slab buildings it is possible to secure much better ventilation than in the beam or beam and girder types. The foremost men of the automobile industry are increasingly adopting measures for conserving the efficiency of their employees. In many ways, therefore, the automobile manufacturers who are using standard factories are encouraging this tendency. Take the problem of factory roofing. The roof over an employees head may not be hygienically so important as the floor under his feet, but it is nevertheless important. Much favoritism is shown for the gypsum tile called pyrobar—fire proof, fume proof and non condensing—instead of wood. This decreases the chances of dampness. The tile is white and, therefore, affords excellent light refraction. As for the advantages of good day lighting, the interior of the Jackson Rim company plant, shown on another page, affords an example of this. The abundance of steel sash and the wide monitor make for an unusually well lighted building. In the Nordyke & Marmon building the same end was attained by the use of 10 feet of saw tooth sash every 30 feet. In the plant of the Cleveland Tractor company a No. 2 type, measuring 90x200 feet, the excellent lighting facilities were emphasized by painting the interior white.

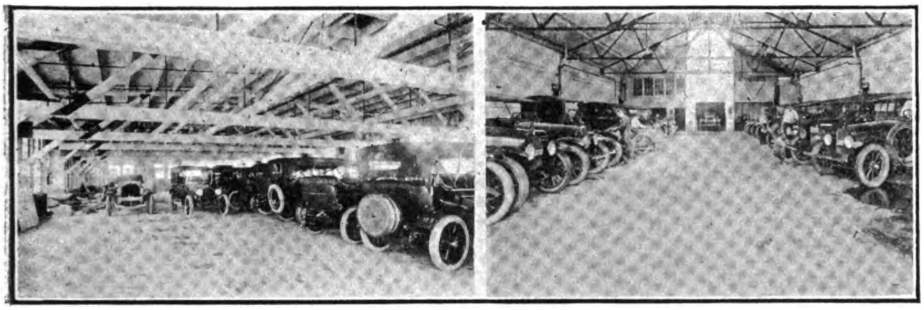
Objections to be overcome in the matter of floors pertain mostly to prejudices of skilled artisans to working upon concrete floors instead of wooden floors. This contention, it is understood, is less forceful than formerly and the era of opposition to concrete floors may be readily passing. Many modern factories are provided with maple wearing surfaces to obviate this very objection. In this connection it is to be observed that concrete floors predominate in the standardized buildings for the automobile industry.

Overlaid wood floors are from the employee's viewpoint a necessity. They are commonly adopted in standardized buildings. The Cleveland tractor has overlaid wood. The Jackson plant has first concrete, then a hemlock sub floor, and over that the finished maple. The Pullmore factory has a wood block floor.

### Accommodating Machinery and Equipment.

The final consideration of interiors of standardized factory buildings for the automobile industry involves the placement of machinery and equipment. The standardized building must afford ease in the installing of machinery, whether it be a mill construction or reinforced concrete building, simply because it is a structure to be devoted to factory purposes. In light manufacturing the increase of group drive has eliminated shafting and pulleys to a degree, especially in the mills handling automobile fabrics, accessories and other light manufacturing. In others, as has been shown in preceding treatment, arrangements are made for the installation of traveling cranes, monorails, pulleys and shafting in the roof structure of the single story standardized types. In the multistory structures a system of inserts installed in reinforced concrete floors gives the most perfect adjustability to the attachment of machines or shafting. Very heavy machinery is readily bolted to concrete floors where inserts are left for the purpose, and this accommodates presses and planers in an automobile factory, or a progressive assembly bed, which may be a stretch of hundreds of feet of movable platforms and conveyors.

Among the Austin standardized buildings for the automobile industry is shown a typical machine shop erected at Jackson, Mich., for the Fox Machine Co. This machine shop itself is considered as part of the equipment. Here the roof system has been expanded vertically and horizontally as it were, and used to carry all the counter shafting, heating and ventilating pipes. In plan the building is 90 feet wide by 313 feet long, with an office 40x48 feet at one corner fronting on a street intersection. In section the main building presents three aisles, each approximately 29 feet six inches wide. The monitor roof is 21 feet three inches clear above the floor and is crane equipped. The roof on the wing bays is supported by light trusses, with 13 feet clearance



**Left:** Interior Peerless Auto Co., Cleveland, O.; **Right,** Hudson-Stuyvesant Garage Room, a Spacious Floor Under Steel Roof Trusses.

above the floor. Exterior columns are of eight-inch I beams. The centre aisle columns are a built up 15-inch I section above the crane. Longitudinal column spacing is 24 feet. Walls are of nine-inch brick, on concrete footing, up to a sill three feet seven inches above grade. Steel sash, factory ribbed glass compose the walls above the sills to the eave line.

What demands particular attention is the use of light steel trusses, eight feet on centres, in the two side aisles. Ordinarily, in engineering economics, a span under 36 feet is better taken care of by a beam than a truss. In this case, however, it was desired to utilize the roof system to support shafting—and so light steel trusses were used, eight feet on centres, carried at the wall and at the monitors by longitudinal trusses. While from a strictly engineering viewpoint this might not have been the most economical construction, yet in the long run, taking into consideration the fact that the lower chords of these trusses, built of light channels, back to back and one inch apart, become an ideal system for the taking care of shafting, the roof as constructed supplies an ideal method for taking care of shafting in standardized building constructions. In keeping up with the newest and best equipment, which means replacement and substitution from time to time, changes can be quickly and easily made with an effective shaft hanging unit every eight feet. In this way the roof system becomes a definite part of the equipment; the building serves the operation. Further, not only do the lower chords of these trusses serve as shafting and machinery supports, but the space above the lower chord is a fine place to run heating and ventilating pipes. The heating pipes resting on the lower chord do not affect the tar roof.

Since Austin Standard designs are already flexible in regard to length, they are usually found suitable for the installation of machinery without further variations in width or height. Occasionally, however, additional height is necessary. For instance, in the case of the tractor plant for the Pullmore Truck Co., Newcastle, Pa., a special height of 18 feet under the trusses was necessary for the installation of overhead shafting and traveling crane and the required combinations supplied from Austin stock steel promptly took care of the variation from type design.

Turning to garage interests the best example is the Hudson-Stuyvesant building in Cleveland. Standard designs were here adapted to efficiency in a building 50 by 179. The front portion, 50 by 60, was built in three stories. On the ground floor, of course, was the show room; on a mezzanine floor were the offices and on the two upper floors were workshops, repair rooms, etc. The rear section, 50 by 120, was the garage proper and receiving room. Here a trussed roof made possible absolutely clear floor space.

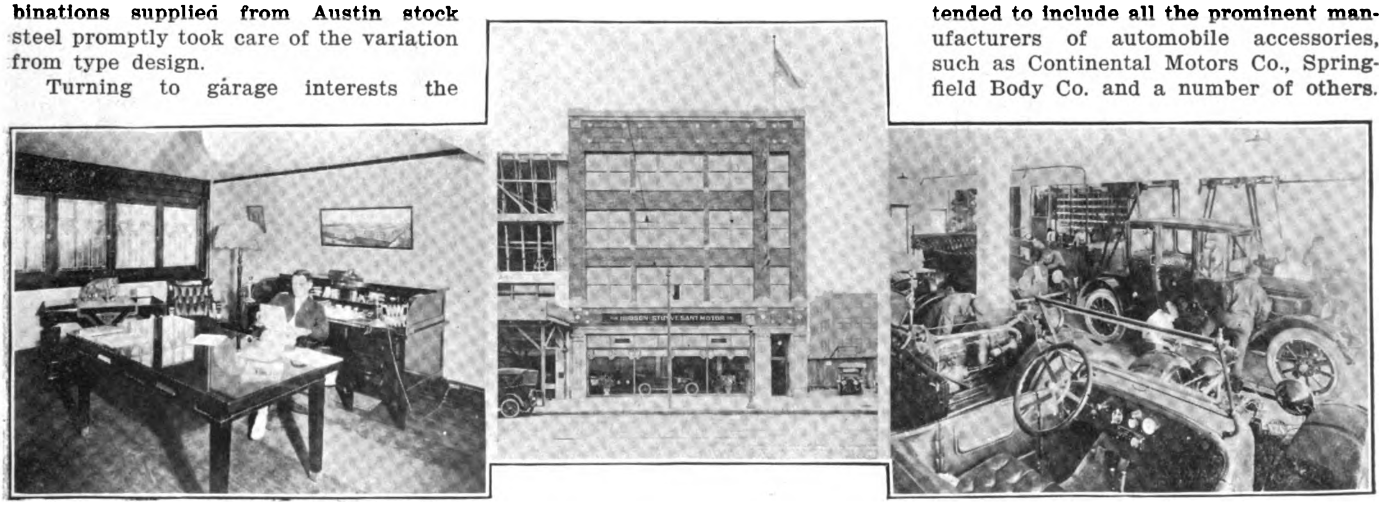
Many construction details tend to economy. Take for instance the new 10-foot gypsum tile roofing used for first time in that length on the Nordyke and Marmon plant. The 10-foot idea is an Austin idea for economy. The light weight of the tile makes it easy to handle and economical of supports. The unusual length decreases the number of purlins and in consequence the number of truss members; and also allows the purlins to be stressed to maximum capacity.

### Garages and Service Stations.

In garages and service buildings it is exceedingly necessary to have wide spacing, and builders cannot span very long distances with wood and still obtain average strength and rigidity. Nevertheless, some excellent structural results have been obtained in the standardized types, both in the structural steel and mass concrete designs.

On sales organization and service buildings particularly, as well as in large factory construction of the multistory type, in frequent instances, the automobile manufacturers specialized in recent years on flat slab reinforced concrete construction. High labor costs, advances in materials and especially railroad congestion have more recently made decided inroads on this program, and due to these and other war conditions factory demand is more today for light than for massive structure.

The number of automobile firms building in flat slab construction currently, making due allowance for war altered plans, is very great. The Ford Motor Co. of Detroit now has over 50 flat slab buildings, located in practically every city in the United States, and their main plant at Detroit is almost entirely flat slab. In like manner the Willys-Overland company started about two years ago to build service stations throughout the United States and they have spent something in the neighborhood of $10,000,000 a year on flat slab building and structural steel buildings with concrete floors. It is not possible to enumerate here all the companies which have gone in heavily for buildings of massive concrete construction, but the Packard, with a large and widespread service station program; the Pierce-Arrow, Chevrolet, Buick, Oldsmobile, Chalmers, Paige-Detroit, Peerless, Lozier, Ford and a number of other companies have built practically all their recent buildings of this type. This list could be extended to include all the prominent manufacturers of automobile accessories, such as Continental Motors Co., Springfield Body Co. and a number of others.



Office, Display Front and a Scene in the Repair Room of the Hudson-Stuyvesant Garage in Cleveland, O., an Excellent Example of Standard Design Adapted to Efficiency.

# *Reliable Service Builds Big Business*

## Boice-Perrine Co., of Boston Distributes Six Well Known Motor Car Specialties in New England, Through 100 Agencies and Its Own Big Plant

PROMPT and reliable service has been the keynote of the very successful motor car equipment specialties business that has been built up in New England in the last five years by the Boice-Perrine Company of Boston. As distributors of six of the best known car accessories in the field the company thoroughly covers the territory with general offices, service stations and warehouse at 48-52 Cummington street, Boston, a branch at Springfield, Mass., and approximately 100 agencies, the latter being thoroughly equipped to give service on the specialties handled.

In addition to marketing this line of specialties the Boice-Perrine Company conducts an electrical supply business, which is aside from its activities in the motor car accessory trade, supplying equipment for public service companies and concerns operating their own electric lighting plants. The Boice-Perrine accessory line, for which it acts as distributors throughout New England, includes the Rayfield carburetor, manufactured by the Findeisen & Kropf Manufacturing Co. of Chicago; United States Light and Heat Corporation, Niagara Falls, N. Y., manufacturer of USL storage batteries for starting and lighting systems; the Dreadnaught Tire and Rubber Co., Baltimore, Md., manufacturer of Dreadnaught pneumatic tires; Castle & Kyte, Detroit, distributor of Hayes wheels, built by the Hayes Wheel Co., Jackson, Mich.; for A. J. Picard & Co., New York City, distributor of Genemotor starters for Ford cars. The company also handles Vulcan springs, made by the Jenkins-Vulcan Spring Co., St. Louis, Mo., and also supplies used in connection with the Genemotor starters, Rayfield carburetors and USL batteries.

Starting with what might be termed a purely local business in July, 1913, in a store at 601 Boylston street, Boston, the company carried a line of accessories, equipment and supplies. Requiring additional space a shop on Harcourt street was occupied later, where a stock of accessories and supplies were kept and equipment installed to give the proper service. This service and the treatment accorded Boice-Perrine customers started the company on its rapid rise to the position of leader in its line in New England.

At this period of the concern's development the distribution of equipment, supplies and accessories in Boston and vicinity was taken up, lines being handled on which the exclusive selling rights for the territory could be secured. The increasing volume of business soon made it necessary to secure larger quarters and the main store was moved to 64 Brookline avenue. In the new store the business expanded rapidly and the distribution of specialties over a larger territory found the company again cramped for room, making it necessary to provide the present large quarters.

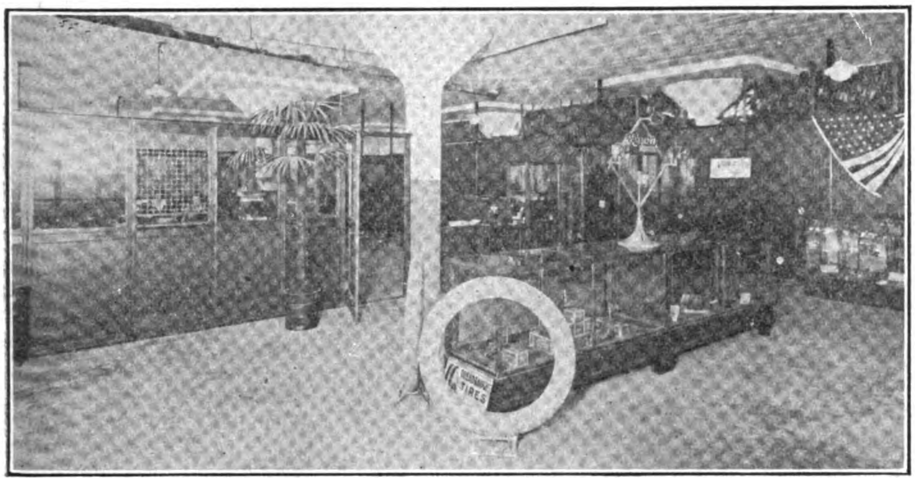
### Contracts Made as Distributors.

In February, 1916, the company made contract to distribute USL batteries throughout New England. The company had previously made a similar contract with the manufacturer of Rayfield carburetors, and it was also distributing Genemotor starters, manufactured by the General Electric Co., in New England territory. Since that time it has also made distributing contracts for the sale of Dreadnaught tires and Hayes wheels. Of course the development of a sales organization required time and a great deal of careful study for requirements with reference to each particular product varied, and in rare instances could a single individual have agency for all of them.

The Generator, which is constructed for installation on Ford cars, might, for instance, be sold through any Ford dealer who could install it, as demand might originate with Ford car agents in a community of considerable size, and

DREADNAUGHT TIRES
15 MONTHS ADJUSTMENT Guarantee
STARTER
RAYFIELD CARBURETOR
SERVICE
PERRINE CO.
TO LET
AUTOMOBILE BUILDING
J. D. K. WILLIS
50 STATE
USL
BOICE-PERRINE CO.
NEW ENGLAND
DISTRIBUTORS
SALES
SERVICE

Main Plant of Boice-Perrine Co., 48-52 Cummington St., Boston, Which Is Elaborately Equipped for Owners' Service for USL Batteries, Genemotor Starters, Rayfield Carburetors and Hayes Wheels.

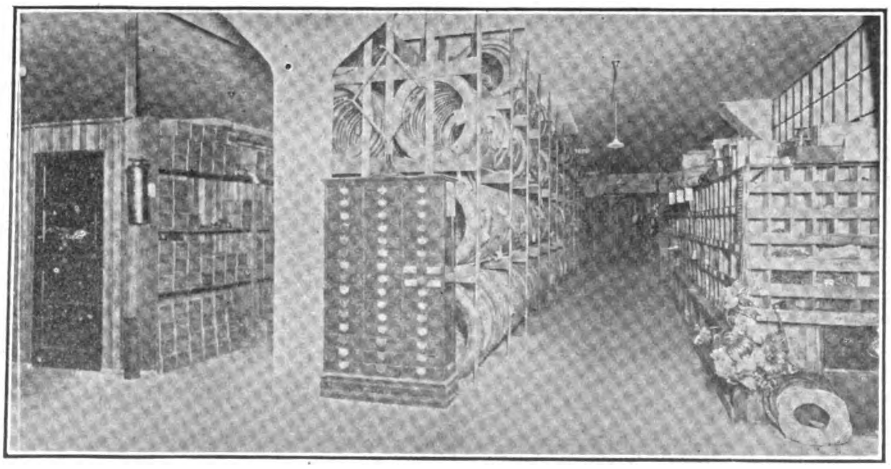


Sales Rooms and a Corner of the Offices Located in Small Section of Second Floor.

exclusive agency in a good sized city might be restrictive rather than developmental. There was belief, founded upon experience, that exclusive service stations would not be as productive of business as a plan of selling such as has been stated, for Genemotors could be supplied as the orders were received and there was not the urgent need that was obvious with other products. One of the main objects was to establish the company as the distributor of Genemotors in New England and to have the knowledge generally obtaining that it was prepared to fill orders immediately and by reliable means of delivery.

The Rayfield carburetor, however, needs be handled by agents who are specialists in carburetion, who are well versed with theory and practical knowledge, who can install these instruments and adjust them so that large fuel economy and engine efficiency can be obtained, who can advise users and suggest how existing conditions can be advantageously changed. Good carburetor men are generally good automobile engine men, because a good knowledge of one cannot be obtained without much practical experience with the other, and the combination of the two is the rule rather than the exception. For this reason salesmanship is not the only essential for successful management of a carburetor service station, and there is some reason to consider location with reference to the number of motorists who may be possible users.

Because lighting and starting systems are almost universal equipment of all automobile passenger cars, and many machines used for several years have been equipped with such systems, a battery service agency is located with a view of convincing the largest number of owners in any given section, the expectation being that motorists will require service so long as they own and operate machines. The electric systems of motor cars must be absolutely dependable and batteries are a vital necessity with either lighting or starting or combination equipment. Because cars are so universally equipped with batteries these are also the sources of ignition current supply, and for this reason the statement that battery service is even more important than any other is not overdrawn. The battery service is not merely carrying a stock of batteries of different types and sizes to make renewals and replacements, but it means charging and discharging, disassembling and repairing or restoring the cells to the highest practical efficiency.



Looking from the Packing Room, Down One of the Aisles of Stock Room Where Pneumatic Tires Are Stored.

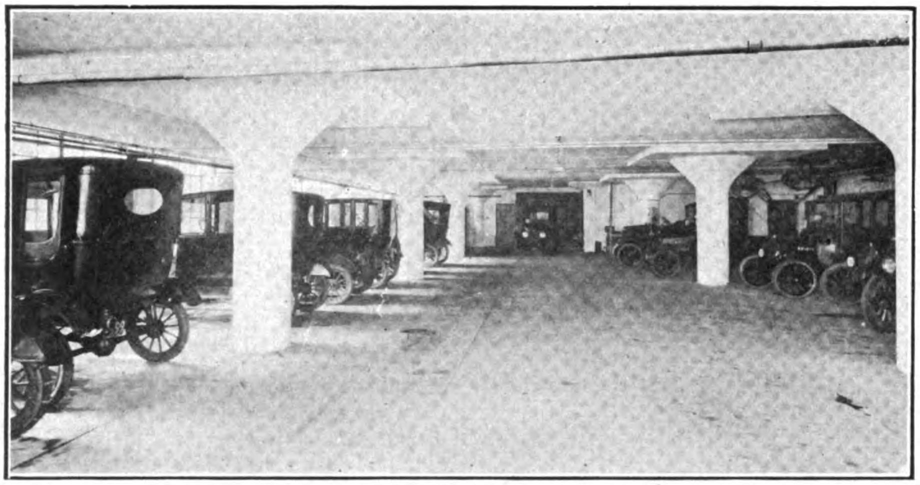
Batteries are shipped by manufacturers in probably the best condition of any equipment installed in power vehicles. from the fact that they must be developed or "formed" to definite standards, the results being ascertained by positive tests and checking so that there is little possibility of a defect escaping inspection. The cells must show actual capacity when charging and discharging, and when incapacity is evidenced special charging treatments and varying tests determine the causes very clearly, so that there is accurate knowledge of any unit and there is little probability of it failing to meet service requirements.

Batteries are extremely serviceable and reliable so long as they are given systematic attention. A precise formula for replenishing water dissipated by charging, or for renewing electrolyte at varying intervals, may serve ordinarily, but this must be supplemented by treatment for renewing potency when reduced from continued undercharging or sulphation or some condition resulting from overcharge or inactivity, and in addition to this there is need of restoration by replacing broken cells, damaged plates, fractured terminals or straps, or other repairing which cannot be done by the individual owners. Cells that are inactive from varying causes may be restored to excellent efficiency by careful treatment by experienced battery men, for comparatively small expense.

A battery service station must be equipped with charging apparatus that can be operated with a considerable number of cells, for charging or "treating" individual cells, for lead burning, and a sufficient stock of jars, wood and rubber separators and positive and negative plates, and other parts that are necessary in repairing, and it must have available the service of at least one man who has experience with charging and making repairs of all kinds. One will understand that a station of this kind entails a considerable investment and a reasonable expectation of business for any one to engage in operating it, and it must be well known to motorists to have such patronage as would make it profitable.

This statement is desirable to inform the reader that the battery service station is a business that cannot be engaged in merely through the investment of capital alone, for custom to a considerable extent will depend upon the battery sold or handled, although there is no reason why other makes of batteries cannot be given equally good attention.

The Boice-Perrine Co. after making contract with the United States Light and Heat Co., established its own service station, equipped to meet every demand upon it by owners, installed a stock of batteries of all sizes and types used for starting and light systems, and all components needed for making repair and restoration, the purpose being to serve its own customers and to have a sufficient reserve to supply subsidiary service stations wherever these might be located. A systematic campaign was begun to establish USL stations in the New England states, each to afford service that would



The Mid-Section of the Floor of the Department Affording Service for Genemotor Starters, Rayfield Carburetors and Hayes Wheels.

measure up to the standard of the company. This was carried out very successfully and the company has today no less than 30 stations outside of its own in Boston.

### Tire and Wheel Distributing Systems.

Upon making contract to distribute Dreadnaught tires the company sought to have agencies where the best of service could be given owners, and where full stocks could be carried to meet every demand that might be made upon them. The company must have a large stock of casings and tubes of all sizes to maintain the stocks of its agencies, as well as meeting the local demands.

The Hayes wheel distributing contract was recently made and no organization for systematic sales has been completed, but the purpose is to establish stations where the wheels can be installed and owners will have the same character of attention afforded for batteries, carburetors and tires. The company devotes all its organization upon these six specialties, and, of course, oversight of the different agencies representing it. There are upwards of 30 Rayfield carburetor agencies, more than 30 USL battery service stations and 40 Dreadnaught tire agencies, or a total of approximately 100, few of which are operated as combinations. This will be considerably increased as the Hayes wheel stations are established.

The policy of the Boice-Perrine Co. is to be constantly in touch with these service stations through its own selling organization, and in addition to this the Rayfield carburetor manufacturers have two carburetor experts constantly in New England, whose services are at the disposal of the stations to advise owners and to make adjustments. The object is to afford whatever degree of attention is desirable to insure entire satisfaction, not only with carburetors, but with all other equipment, and the service is augmented and developed as conditions justify.

The specialty distribution and the service demands in Boston become so large that the company during the autumn had constructed a building in Cummington street purposely for service station purposes, and occupied it Oct. 1. The structure is of concrete, steel and stone. The location is central in the automobile section of the city, being just off Commonwealth avenue and convenient of access from all of the main motor thoroughfares.

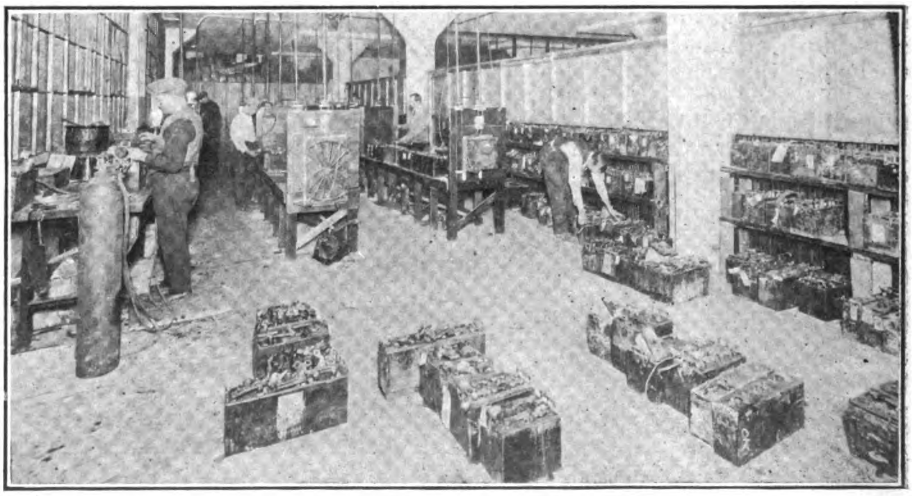
The building is two stories and basement, fireproof and splendidly lighted. The company has floor space of approximately 20,000 square feet, or nearly a half acre.

The basement is given over to the Genemotor, Rayfield carburetor and Hayes wheel service department, and it is laid out so that there will be the largest practical floor area for placing cars on which work is progressing. Along one side of the floor is a work bench that is admirably lighted by large windows, and at the other side are the lathes and other machine tools necessary, the greater part of the floor being clear. A stock room and tool room, located in one corner and well lighted by windows, is equipped with parts of all kinds for Genemotors, carburetors and wheels, and there is an elevator large enough to take a passenger car of large size with lifting capacity of four tons. With this a small delivery truck can be taken directly into the stock room on the upper floor for unloading, so that one handling is sufficient, or a machine may be loaded in the stock room, taken down and driven out.

The first floor is the USL battery service station, and this is divided into an office and waiting room, a repair and charging room, a stock room and a storage floor that will accommodate about 15 cars. The office is for this department only and the records are kept separate from the general accounting of the company. The stock room is large and in it is carried parts of all kinds for all types and sizes of USL cells used for motor vehicle equipment. It has ample bench room for cell and battery disassembly and assembly for repairing, charging panels adapted for any number of cells up to the voltage limitations for either treatments or charging, with lead burning apparatus and tools necessary for battery work. It has all instruments needed for tests and experiments for both board and hand work.

A considerable stock of batteries is carried so that exchanges may be made for batteries brought in for repair or recharging, that cars may be used, and these are some times rented as well. In this department work is done for the regular customers or for transients, as well as for any of the service stations that may send batteries to the company that cannot be repaired or restored by them. In connection with the stock room is the shipping and receiving department. The battery station is open continuously because of the need of service at all times. While USL batteries are specialized, work on other batteries is done as required. This department is constantly growing and the demands upon it are very large.

On the second floor are the general offices, a sales room where display is made of the different specialties handled by the company, and the stock room in which are large stocks of Dreadnaught tires and tubes of all sizes, Rayfield carburetors and fittings, and Hayes wheels and parts and where these are also packed and shipped. This room can be considerably increased in the event of need by changes that are practical and which will not restrict the offices and sales rooms.



The Charging and Repairing Room of the USL Battery Service Division, Which Occupies an Entire Floor of the Station.

# *Twin Cities Hold Biggest Automotive Show*

## Nearly 200,000 People Visit Exhibition of Cars, Trucks, Tractors and Motor Industry Products Held Between St. Panl and Minneapolis

BARNUM'S slogan, "the greatest show on earth," applied to his big three-ring circus, and which was posted on billboards the world over, is the most appropriate phrase to be employed in describing the Twin Cities Automotive Show that was staged in the Overland building, located half way between St. Paul and Minneapolis, in which 268,000 feet of floor space was used. The great Northwest outstripped its eastern competitors in staging an industrial show, as in space occupied, the exhibition was larger than the two great New York and Chicago National Automobile Shows combined.

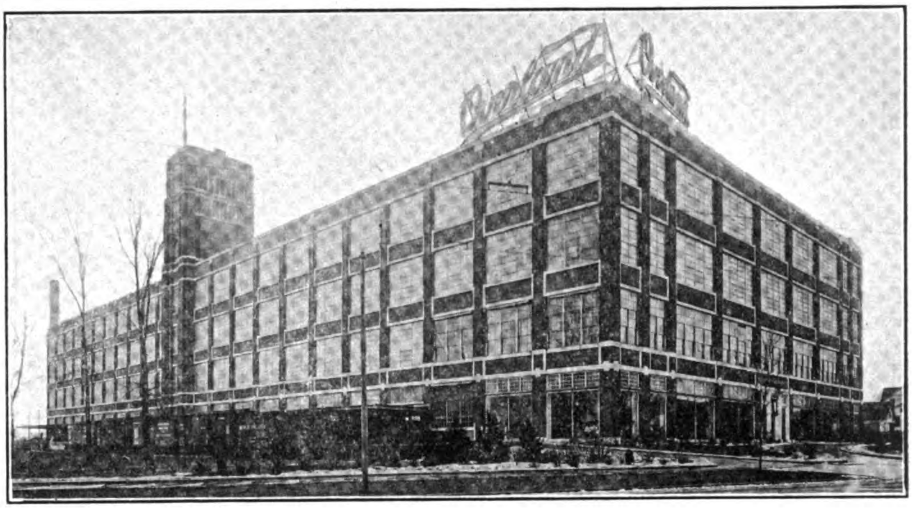
The show, in fact, was not only the first and greatest of its kind ever held in the world, but in point of attendance probably established another new record, 178,270 people passing into the building during the seven days that the exhibit was open. It was a stupendous project from the start, but was conceived and put into effect in the short space of six weeks. While there were varied exhibits, it was primarily an exposition of the motor industry, as there were 46 motor car exhibitors, 40 showing tractors, 36 truck and truck accessory displays and 105 accessory exhibitors.

In addition to these exhibits there were various forms of amusement and recreation offered in the building, a feature which made the show a good business proposition. Thousands of farmers and dealers came from distant points and once in the building, usually stayed until the closing hour, 10 p. m. It was also a success from the viewpoint that several lines were exhibited which could be handled by dealers in comparatively isolated sections where a single line of either cars, trucks, tractors or gasoline engines for farm use would not be profitable. The promoters had this idea in mind as the dealer of the future in the rural sections will carry these allied lines, requiring similar methods of handling and service.

One of the most novel features in connection with the extensive advertising campaign, that was conducted in making the show a huge success, was the tractor parades held in St. Paul and Minneapolis about a week before the show opened. This parade was in keeping with the stupendousness of the project, being of the pageant type and a mile in length. Heading the procession was a prehistoric man with a wooden plow, typifying the ancient method of cultivating the soil. Next came an Indian with a stick plow. Then an ox team with an iron plow, followed in turn by two horses with a modern plow. The procession brought up with a team with a sulky plow, early and latest models of tractors. There were 45 tractors in line and all the divisions were marked with descriptive banners and banners advertising the show. Numerous bands gave the occasion the proper atmosphere.

**TWIN CITIES AUTOMOTIVE SHOW IN FIGURES.**

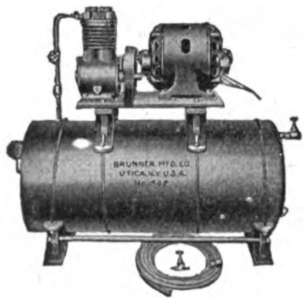
| | |
|---|---|
| Space occupied, square feet | 268,000 |
| Total exhibitors | 387 |
| Car exhibitors | 46 |
| Tractor exhibitors | 40 |
| Trucks and accessory exhibitors | 36 |
| Accessory exhibitors | 105 |
| Tractor accessories and farm implements | 17 |
| Farm power equipment exhibitors | 36 |
| Aviation products | 2 |
| Marine engines | 1 |
| Business equipment exhibitors | 25 |
| Miscellaneous | 79 |
| Attendance | 178,270 |
| Dealer attendance | 6,000 |



Twin Cities Branch of Willys-Overland, Inc., Where the Automotive Show Was Held, Containing 320,000 Square Fleet of Floor Space.

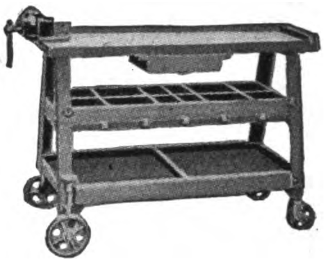
The show was under the management of Walter Wilmot and E. W. Cambell of Boston, who has made the decorations for the Boston Automobile Show for the past several years, had charge of the decorating work.

Automobile, Tractor and Truck Dealers, Guests of F. N. Coats, Manager of the Twin Cities Overland Branch, Gathered in Front of the Big Show Building, Prior to Drawing Space for Their Exhibits.



Brunner Air Compressor Outfit.

# GARAGE EQUIPMENT



United Engine Portable Bench.

## U. S. DE LUXE COMPRESSOR.

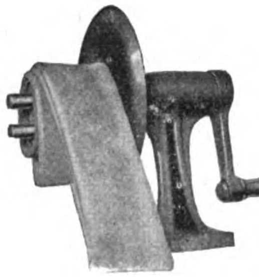
An extremely practical outfit for the large garage or service station for furnishing air is sold under the name De Luxe two stage automatic air unit. This apparatus consists of a large steel tank mounted on suitable frame and carrying a table upon which are placed an air pump of special design, an electric motor and controlling switch.

The air pump is of the two stage type and has two compression cylinders, a large cylinder into which air is admitted at atmospheric pressure, and a second, smaller, which takes air from the large cylinder at low pressure and forces it into the tank. The connecting pipe is fitted with a number of cooling fins which radiate the heat from the compressed air.

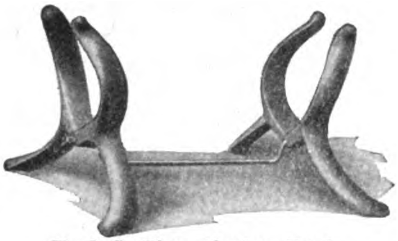
Before the air is admitted to the tank it is filtered to remove all traces of oil or moisture that might be discharged from the compressor. The motor may be obtained in all standard types for use with either direct or alternating current. For alternating current outfits the starting tank is fitted with an automatic pressure release. When the motor stops, having raised the tank pressure to maximum, the release operates, permitting air in the auxiliary starting tank to be released. Thus, when starting again, the motor begins operation against no pressure and gradually picks up the load.

An automatic controller switch starts and stops the motor at a predetermined pressure and can be adjusted to maintain any desired pressure. The whole outfit is crated, as illustrated, and requires no assembling, being ready to run as soon as the plug is attached to electric light circuit.

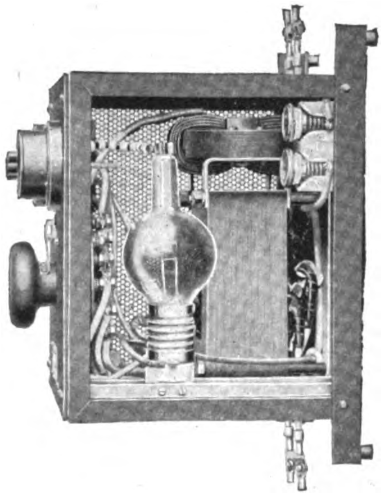
**Manufactured by the United States Air Compressor Co., 6538 Carnegie Ave., Cleveland, O. Write for prices.**



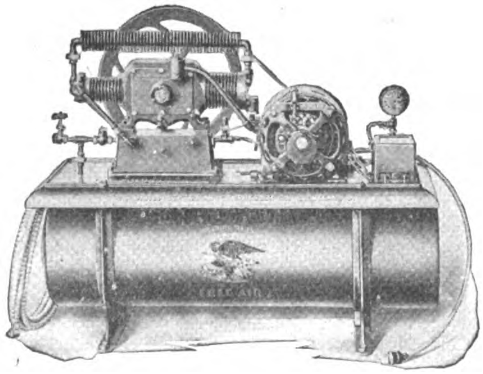
Tube Deflator.



E. & S. Tire Display Rack.



Tungar Rectifier.



U. S. De Luxe Compressor.

## E. & S. TIRE DISPLAY RACKS.

To eliminate the necessity of stacking tires or propping them up in show windows by means of pasteboard or wooden posts, the E. & S. Tire Display Rack is made.

This device consists of two hinged members mounted on a heavy wire centre piece, upon which may be placed a tire of practically any size. The weight of the tire resting on the hinged members compress them so that the jaws hold the tire firmly in place and prevent it from rolling in the device. The display rack may be obtained neatly finished in black or gray iron, or nickel plated and makes an attractive display stand either for use in the show window or on the floor.

**Manufactured by Ellis-Smith Manufacturing Co., Inc., Buffalo, N. Y. Price, finished in gray or black, $1.75; nickel, $2.25.**

## TUBE DEFLATOR.

A handy little device for use in repair shops and garages where much tire repairing or storing is done, is illustrated herewith. To deflate a tube by the old hand method takes both time and patience and few repair men or car owners care to go to this bother. With the device illustrated, however, the tube is slipped over one of the projections on the plate, then, by turning the handle, the tube is wound tightly around the two projections and the air is quickly exhausted.

Practically any size tube may be deflated with the device, which may be placed on the bench or wall in any convenient position.

**Manufactured by the Williams Foundry and Machine Co., Akron, O. Write for price.**

## TUNGAR RECTIFIER.

The storage battery charging business is growing very fast, for nowadays practically every car is fitted with a battery of some make or other. Nearly every garage in the country has a call from their customers for battery service and repair men can hardly afford to overlook this chance for greater profits.

Where alternating current is available, the Tungar rectifier solves the problem of converting this supply into direct current, for alternating cannot be used for charging direct. This device consists of a rectifier tube, rheostat, switch and ammeter, mounted on and in a sheet iron fire proof box which may be bolted to the wall in any convenient place. The outfit has a capacity of six amperes and 75 bolts and may be used for charging from one to 10 three-cell storage batteries at one time, from 115 volt current source.

Two leads from the upper part of the rectifier box are connected with the alternating current, while the two lower are connected with the storage batteries to be charged. When the switch is turned on, the current flows through the batteries, the rectifier tube need not be shaken to start the flow. If for any reason the source of current should fail the batteries cannot discharge through the rectifier, but will continue charging as soon as the current supply begins again.

The device comes complete and ready to attach, the box is amply ventilated to take away the generated heat, compactly made and neatly finished in japan.

**Manufactured by General Electric Co., Schenectady, N. Y. Write for prices.**

## CURTIS AIR COMPRESSORS.

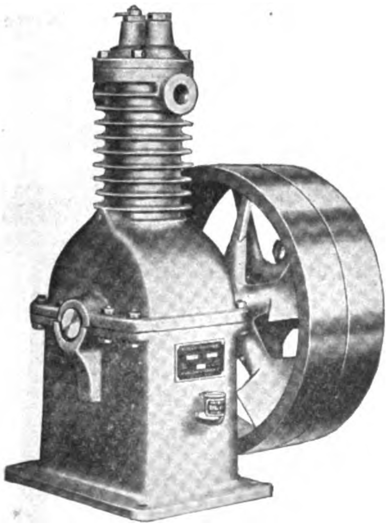
One of the essential elements which makes for tire destruction is the presence of oil in the air with which the tires are inflated. For this reason the manufacturers of air pumps are doing their best to eliminate all chances for leakage of oil into the compressor cylinders.

The Curtis Air Compressors for garages and service stations are said to possess exclusive features of unquestioned merit and are guaranteed by the manufacturers, who have manufactured pneumatic machinery for over 25 years, to furnish a continuous supply of cool, pure, clean air, free from oil.

In the Curtis compressors the oil leakage into the cylinder has been overcome by their patented control splash oil system, which regulates the oil supply, permitting only enough oil to reach the cylinder to lubricate it without leaving any excess that can be carried into the discharge line. The result is that practically no oil can get into the tires to rot them and it is claimed that the compressor will run on one-tenth the amount of oil ordinarily required by a splash oiling compressor.

The Curtis line of air compressors comprises five sizes and 125 combinations, assuring the correct size and style air compressor for every possible need. The compressor illustrated may be had in five sizes with tight and loose pully fitting or tight pulley only.

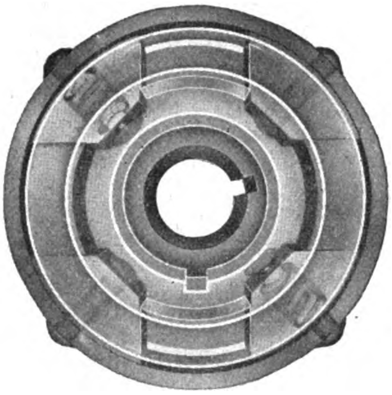
**Manufactured by Curtis Pneumatic Machinery Co., 1621 Kienlen Ave., St. Louis, Mo. Write for prices and catalogue.**



Curtis Air Compressor.

## RAYFIELD COUPLING.

Something radically new in the line of magneto, generator or pump shaft couplings has just been put on the market, known as the Rayfield coupling. This device, like the Oldham, makes a flexible connection between the shaft, but has a number of valuable features.



RAYFIELD COUPLING
PATS. PEND.

The main body of the coupling consists of a ring two inches in diameter, to which are riveted solidly two triangular shaped steel blocks, extending on the inside, and spaced at opposite sides. On the inside, also, evenly spaced between the two solid blocks, are two similar blocks, which are mounted loosely on rivets and pressed toward the centre by small coil springs.

Regularly constructed shaft end members, each with two projections or jaws opposite each other, are inserted between the blocks, thus forcing the loose riveted spring blocks outwardly from their inner rivet heads by compressing the springs. Due to spring pressure, these loose blocks hug the shaft end members or jaws and take up any wear or play.

Another feature of the coupling is that it may be adjusted in any number of positions, as regards shaft revolution, permitting the alteration of timing to within a thousandth part of an inch. This is accomplished by a magneto end member, and a tapering jaw provided with knurls inside the taper and a hex nut, suitably locked by a washer. The magneto end is threaded and drawn up with the nut and locked into place as desired.

**Manufactured by the Geo. D. Bailey Co., 1120 S. Michigan Ave., Chicago, Ill. Write for prices.**

## DAYTON WIRE WHEELS.

Dayton Wire Wheels are now being manufactured for Chevrolet cars, in addition to the regular Ford wheel line. These wheels are constructed similar to the design of their regular Ford type, which this company has been manufacturing for some time.

It is claimed that the patented triple spoke lacing of these wire wheels makes them five times as strong as an ordinary wood wheel, and that they will not collapse under the most violent impact.

Dayton-Chevrolet wheels are sold in sets of five. The extra wheel being carried with tire inflated, ready for instant use. The hub caps and hub cap mountings are furnished, which makes it a very easy matter to change from wooden wheels to the wire wheels.

**Manufactured by the Dayton Wire Wheel Co., Miami Road, Dayton, O. Write for prices and descriptive literature.**

## ELEKTRO AUTO ENGINE HEATER.

Many autoists realize that they are putting a severe strain on the storage batteries of their cars when they try to start the engine on a cold winter morning, as they crank it for many minutes at a time without results.

The real reason for difficult starting in an engine that is otherwise in good condition can be traced directly to poorly vaporized fuel. A heated garage solves the problem, but few private garages are heated. Another still easier solution is given in the Elektro Auto Engine Heater, a device which is designed for attachment to any electric lighting circuit, and when thus connected and placed beneath the car hood, on the engine, furnishes considerable heat, with but little expense.

The device is extremely simple and compact. It is fitted with a carrying handle and 10 feet of fixible cord, with attachment plug. In ordering this device be sure to specify voltage of electric lighting current.

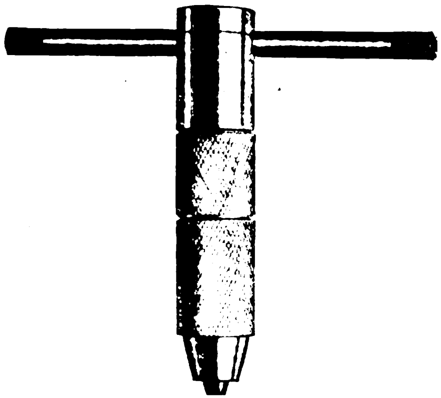
**Manufactured by D. C. Hughes & Co., 4642-44 Ravenswood Ave., Chicago, Ill. Price, $3. Liberal discounts to dealers.**

## RATCHET TAP WRENCH.

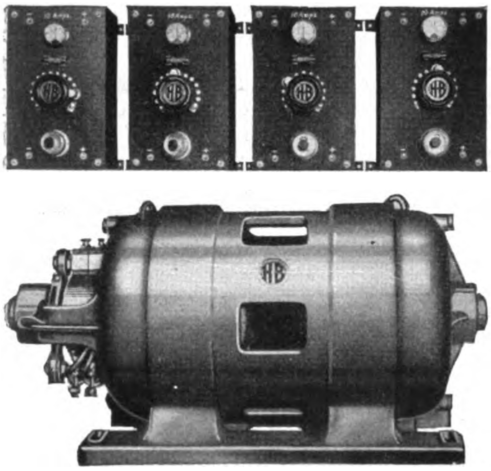
A new and very handy tool has just been put on the market, made in two sizes, which is designed for holding small taps. Number one size will take taps up to ¼ inch and number two from ¼ to ½ inch.

The chuck and jaws are made of hardened steel and fitted with a ratchet attachment, which may be clamped, or adjusted to right and left positions, by the turning of a knurled sleeve. The handle is so arranged that it may be slipped from one side to the other, permitting its use with facility in the most difficult corners.

**Manufactured by Moss-Ochs Co., 3387 E. 116th St., Cleveland, O. Write for prices.**



Ratchet Tap Wrench.



## NEW HOBART BATTERY CHARGER.

For the garage man who intends to do an extensive business in the battery charging line, or for the garage which makes a specialty of this line of work, the large new battery charging outfit has been designed.

The current generating outfit consists of a standard alternating current motor with generator in the same housing, the shafts of motor and generator armatures being integral. By means of the device alternating current is converted into direct current for charging storage batteries.

Four charging panels are provided, each fitted with snap switch, rheostat, fuse, ammeter and binding posts, for connection with four distinct battery charging lines. By means of this equipment different voltage batteries can be charged in the same line, or batteries requiring different charging rates taken care of at the same time.

The outfit is sold on a payment plan that should enable one to pay for the outfit from the profits while the machine is being used. The selling plan calls for a reasonable initial payment and the balance to be paid in 10 monthly payments.

**Manufactured by Hobart Brothers Co., Troy, O. Write for full particulars.**

## THE MONARCH LATHE.

Many car repair men have said that, given a compound screw cutting lathe they would be able to do practically any automobile repair job. Such a machine is the Monarch lathe, a tool with an extremely wide range of work. With a swing over shears of 14½ inches and a clearance over the carriage of 9½ inches, the lathe will take practically any size cylinder block or crankshaft. The bed is supplied in multiples of two feet from six to 12 feet.

The head is exceptionally heavy the spindle being made of 50 point carbon crucible steel ground to size and supported on phosphor bronze bearings. Back gears are locked in and out of position by a spring plunger, the double back gears are of the positive geared type. A quick change gear box is used and the gears are said to be as large as ordinarily used on 18 and 20-inch lathes.

The carriage is carefully fitted to the bed and has a 23-inch bearing, the cross bridge is six inches wide and heavily reinforced. All gears in the apron are drop forged steel. A reverse feed and interlocking device which prevents the feed rod and lead screw from being engaged at the same time is provided.

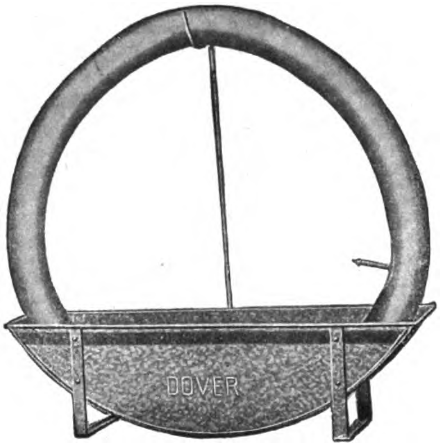
The compound tool rest is gibbed throughout, very wide and has large wearing surfaces. Dial, swivel and cross feed dial are accurately graduated. The tool post is milled from a bar.

Designed so that the compound rest can be set at right angles, the tail stock is massive and fitted with two clamp bolts. All bearings are carefully hand scraped.

**Manufactured by Monarch Machine Tool Co., Sidney, O. Write for prices and descriptive literature.**

## TIRE TESTING TANK.

Tire repair men before passing a tube as being completely repaired are called upon to test every portion of it for slow leaks. Under ordinary tests, such leaks are hard to locate and the water method is perhaps the easiest and best way of locating such troubles.



Dover Tire Testing Tank.

The Dover Tire Testing Tank is a device 30 inches long, six inches wide and eight inches deep, made of heavy galvanized sheet iron, designed to facilitate the testing of tires. Circular in shape the tank may be nearly filled with water and the tube fully immersed in it. A supporting rod, which is adjustable, supports the tire to be tested, leaving the operator's hands free for turning the tube.

**Manufactured by Dover Stamping and Manufacturing Co., Cambridge, Mass. Write for prices.**

## WAYNE CURB OUTFIT.

An attractive and practical gasoline distributing curb station is illustrated herewith, and is one of the well known Wayne products. It stands nine feet two inches overall and has a base diameter of 18 inches. The housing is cylindrical in form, the upper part of which slides up and down on counter-balanced weights, much like a window. This arrangement does away with the necessity of extra space at the curb, which is always necessary where hinged doors are employed. Another feature claimed for the device is that because of its cylindrical form it is entirely water tight when closed, eliminating all chance of damage to the mechanism and making it impossible for the pump to be operated by an unauthorized person.

The continuous forward motion of the pump handle is said to be one of the biggest features. With this device there is no reverse stroke, consequently no lost motion, the pumping action being had by a two plunger, cam operated pump, which has a simple hand adjustment and graduated dial reading to 20 gallons, and as low as one quart.

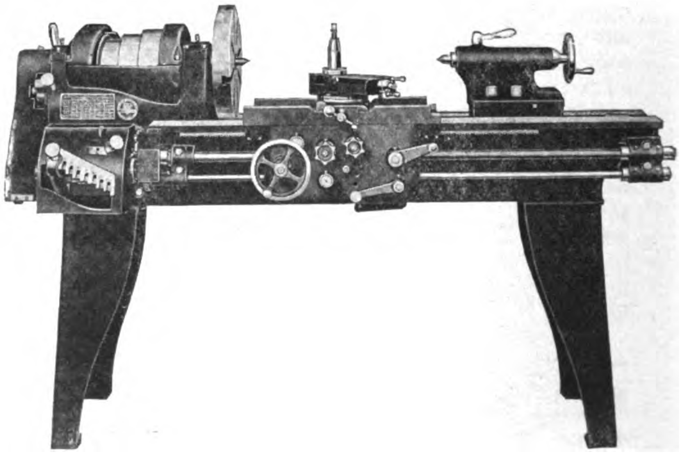
Two recording devices are attached to the pump, one 1,000,000 gallon meter is found on the front and located in such a manner that an absolute record of all gasoline drawn is kept at all times. The second recording device is for limiting the amount drawn at one time and is explained in the previous paragraph.

The entire mechanism is readily accessible for necessary repairs and adjustments. Finished in orange enamel and surmounted by an illuminated sand blasted globe, the device presents a neat appearance.

**Manufactured by Wayne Oil Tank and Pump Co. Fort Wayne, Ind. Write for terms and catalogue.**

FILTERED GASOLINE
Wayne

At Left, Wayne Curb Outfit. Below, Monarch Lathe.



# *Securities and General Materials Markets*

## *Automobile Securities Quotations*

| | Jan. 17 | | Feb. 7 | |
|---|---|---|---|---|
| | Bid | Asked | Bid | Asked |
| Ajax Rubber Co | 50 | 58 | 46 | 55 |
| J. I. Case T. M. Co., pfd | 76 | 89 | 77 | 81 |
| Chalmers Motor Co., com | 2 | 4 | 3 | 5 |
| Chalmers Motor Co., pfd | .. | 50 | 25 | 40 |
| Chandler Motor Co | 72 | 73 | 82 | 83 |
| Chevrolet Motor | 109 | 112 | 119 | 121 |
| Fisher Body Corp., pfd | 71 | 80 | 80 | 87 |
| Fisher Body Corp., com | 28 | 33 | 26 | 35 |
| Fisk Rubber Co., com | 45 | 47 | 49 | 51 |
| Fisk Rubber Co., 1st pfd | 98 | 103 | 98 | 103 |
| Fisk Rubber Co., 2nd pfd | 60 | 70 | 60 | 70 |
| Firestone Tire & Rubber Co., com | 98 | 100 | 95 | 98 |
| Firestone Tire & Rubber Co., pfd | 96 | 98 | 95 | 97 |
| General Motors Co., com | 114 | 115 | 134½ | 136½ |
| General Motors Co., pfd | 80 | 82½ | 85 | 89 |
| B. F. Goodrich Co., com | 39 | 41 | 47 | 49 |
| B. F. Goodrich Co., pfd | 95 | 98 | 97 | 100 |
| Goodyear Tire & Rubber Co., com | 150 | 154 | 132 | 136 |
| Goodyear Tire & Rubber Co., pfd | 95 | 97 | 97 | 100 |
| Grant Motor Car Corp | 2 | 3 | 2 | 3 |
| Hupp Motor Car Corp., com | 2 | 3 | 2¾ | 3 |
| Hupp Motor Car Corp., pfd | 75 | 83 | 75 | 80 |
| International Motor Co., com | 15 | 17 | 14 | 17 |
| International Motor Co., 1st pfd | 33 | 34 | 40 | 45 |
| International Motor Co., 2nd pfd | 15 | 20 | 14 | 17 |
| Kelly-Springfield Tire Co., com | 44 | 46 | 46 | 47 |
| Kelly-Springfield Tire Co., 1st pfd | 75 | 85 | 75 | 80½ |
| Lee Rubber and Tire Corp | 14 | 15 | 14 | 15 |
| Maxwell Motor Co., Inc., com | 25 | 26 | 28 | 29 |
| Maxwell Motor Co., Inc., 1st pfd | 57 | 58 | 60 | 61 |
| Maxwell Motor Co., Inc., 2nd pfd | 20½ | 22 | 22 | 23 |
| Miller Rubber Co., com | 130 | 140 | 129 | 134 |
| Miller Rubber Co., pfd | 95 | 98 | 95 | 96 |
| Packard Motor Car Co., com | 95 | 103 | 85 | 90 |
| Packard Motor Car Co, pfd | 92 | 96 | 91 | 94 |
| Paige-Detroit Motor Car Co | 14 | 16 | 16 | 18 |
| Peerless Truck Car Corp | 15½ | 17 | 16 | 17 |
| Portage Rubber Co., com | 109 | 111 | 108 | 112 |
| Regal Motor Car Co., pfd | .. | 23 | .. | 23 |
| Reo Motor Car Co | 16 | 18 | 16 | 18 |
| Saxon Motor Car Corp | 8 | 9 | 9½ | 11 |
| Standard Motor Construction Co | 9 | 10 | 9 | 11 |
| Standard Parts Co | 65 | 75 | 72 | 80 |
| Stewart Corp., com | .. | .. | .. | .. |
| Studebaker Corp., com | 50 | 51 | 53 | 54 |
| Studebaker Corp., pfd | 91 | 96 | 91½ | 97 |
| Stewart Warner Speed Corp | 48 | 50 | 51 | 52 |
| Swinehart Tire & Rubber Co | 16 | 26 | 35 | 40 |
| United Motors Corp | 22 | 24 | 25 | 25¼ |
| U. S. Rubber Co., com | 53 | 54 | 57 | 58 |
| U. S. Rubber Co., pfd | 97 | 98 | 98 | 101 |
| White Motor Co | 39 | 40 | 41 | 42 |
| Willys-Overland Co., com | 17 | 18 | 18¼ | 19 |
| Willys-Overland Co., pfd | 78 | 82 | 78 | 79½ |

## *General Market Prices*

| | Dec. 18 | Feb. 18 |
|---|---|---|
| Iron, foundry, 1 X ton | 34.00 | 34.00 |
| Iron, foundry, 2 X ton | 33.50 | 33.50 |
| Iron, Bessemer, ton | 36.30 | 36.30 |
| Steel, Bessemer, ton | 47.50 | 47.50 |
| Copper, 100 lbs., electric | 23.50 | 23.50 |
| Lead, 100 lbs | 6¼ | 7 |
| Tin, 100 lbs | 88 | .... |
| Petroleum, Kan., cr., bbl | 2.00 | 2.00 |
| Petroleum, Pa., cr., bbl | 3.75 | 4.00 |
| Linseed oil, raw | 1.22 | 1.30 |
| Lard oil, prime | 2.30 | 2.25 |
| Fish oil, Menhaden, br | 95 | 97 |
| Sulphuric acid, 60 | 1.50 | .... |
| Cottonseed oil, bbl | 18.50 | 20.75 |
| Silk, raw, Italy | .... | .... |
| Silk, raw, Japan | 8.10 | 6.10 |
| Rubber, fine, up-river, Para | 59 | 57 |
| Tire, scrap | 4¾ | 4¾ |
| Steel, open hearth, ton | 44.50 | 44.50 |

### DOMESTIC CRUDE OIL PRICES.

The prices of crude petroleum at the wells during the middle of the month of February were:

| | | | |
|---|---|---|---|
| Pennsylvania dark | $4.00 | Corsicana light | $1.90 |
| Mercer black | 2.23 | Corsicana heavy | 1.05 |
| Cabell | 2.77 | Electra | 2.00 |
| New Castle | 2.10 | Henrietta | 2.00 |
| Corning | 2.85 | Caddo, La., 38° | 2.00 |
| Wooster | 2.48 | Caddo, La., heavy | 1.00 |
| North Lima | 2.18 | Healdton | 1.20 |
| South Lima | 2.18 | Moran | 2.00 |
| Indiana | 1.03 | Strawn | 2.00 |
| Princeton | 2.22 | De Soto | 1.90 |
| Somerset 32° | 2.60 | Thrall | 2.00 |
| Ragland | 1.25 | Crichton | 1.50 |
| Illinois above 30° | 2.22 | Canada | 2.45 |
| Kan. & Okla | 2.00 | Humble | 1.00 |
| Plymouth | 2.13 | Cal., 37 grav | 1.32 |

**Naphtha.**

| | 10-gal. drums | |
|---|---|---|
| | Under 100 cases | 100 cases and over |
| Benzine, 59-62° | 45½ | 45 |
| Stove | 45¾ | 45¼ |
| Auto, 68-72° | 51¼ | 53 |
| Naphtha, 73-76° | 55¾ | 54¾ |

| | In cans and cases | | |
|---|---|---|---|
| | Under 100 | 100-199 | 200-299 |
| Benzine, 59-62° | 33¼ | 33 | 32¾ |
| 73 a 76° | 43 | 42¾ | 42½ |
| Stove | 33½ | 33¼ | 33½ |
| Auto, 68-72° | 39 | 38¾ | 42 |

### NEW YORK CITY PRICES.

New York City prices for petroleum and its products were:

**Petroleum.**

| | | | |
|---|---|---|---|
| Crude, barrels, a gallon | 15a14 | Fuel, 31° | 12 |
| Refined, barrels | 16 | Fuel, 34° | 13½ |
| Tank wagons delivery | 11 | | |

**Naphtha.**

| | | | |
|---|---|---|---|
| Garages | 24 | V. M. & P. deod., in steel | 26 |
| Consumers | 26 | V. M. & P. deod., in wood | 28 |

**Gasoline.**

| | | | |
|---|---|---|---|
| Gas machine, steel | 41 | 68-72° steel | 32 |
| 72-76° | 38 | 68-72° wood | 28 |
| 72-76° wood | 39 | | |

## *Foreign Trade Opportunities*

(Address Bureau of Foreign and Domestic Commerce, Washington, D. C., giving number, which will forward correspondence, unless otherwise stated.)

26,401—A man in China desires to be placed in communication with American manufacturers and exporters of leather of all kinds, printing and writing paper, electric wires, cheap passenger automobiles, motorcycles, motor car accessories, tires, agricultural machines, gasoline motors, typewriters and sewing and knitting machines, hand or motor, for cotton, silk and linen. He wishes to represent firms handling these goods. Correspondence should be in French. References.

26,445—A man in Italy is in the market for automobile engines, light chassis, automobile parts, motorcycles, accessories, etc. Payment will be made by cash or in advance. Correspondence may be in English. References.

26,457—The fire department of a city in Canada is desirous of purchasing motor apparatus consisting of two engines, one being a pumping and hose truck combined at a cost of about $14,600, and a ladder truck at a cost of about $7000. The pumping and hose truck must carry from 1500 to 2000 feet of hose, and with 150 horsepower should be able to pump 1000 gallons of water per minute.

26,471—An agency is desired by a man in Uruguay for the sale of hardware and allied lines, especially iron and steel wire, plain and corrugated galvanized iron, iron pipe and accessories, tools, screw cutting machines and tools, paint and tops and other accessories for carriages and carts, oil cloth and cloth for motor cars and carriages, lubricating grease and oils. Correspondence should be in Spanish. Reference.

# Activities of Prominent Men of the Industry

## Resignations, Promotions and Other News of the Personnel of Motor Vehicle Manufacturing and Merchandising Companies and Allied Businesses

**W. B. Cochran** has been appointed western sales manager of the United States Motor Truck Co. at San Francisco. He will have charge of the alloting of territories and appointing dealers throughout the West.

**A. G. Dale**, who was formerly with the Premier Motor Corporation, is now associated with the King Motor Car Co. as district sales manager.

**C. E. MacConnell** has been appointed to the staff of sales engineers of the Hyatt Roller Bearing Co., Detroit. He was formerly with the Detroit branch of the Goodrich Rubber Co. as advertising manager.

**Waddill Catchings** has been elected a director of the Studebaker Corporation, South Bend, Ind. He takes the place of Henry Goldman on the executive committee. Mr. Goldman, who has retired from active business, has withdrawn from the executive committee, but will remain a director of the company.

**Charles A. Ackerman** has been appointed sales manager for the Franklin Motor Car Co. of New York as Franklin distributor, and will have supervision over both new and used car departments. He has been for the last three years used car manager of the New York branch of the Studebaker branch.

**George D. Kershaw** has been appointed general works manager for the Standard Aeroplane Corporation of Elizabeth, N. J.

**The L. V. Fletcher & Co.**, New York City, has opened a branch office at Detroit with George K. Parsons in charge. Frank M. Eldredge, formerly of the Wallace C. Hood Service Bureau, is advertising and publicity manager. The company manufactures carburetors.

Frank M. Eldredge, Advertising and Publicity Manager of L. V. Fletcher & Co., New York.

**Mason P. Rumney**, formerly sales manager of the Detroit Steel Products Co., has been appointed a lieutenant in the Ordnance Department.

Guy E. Tripp, Chief of Production Division of Ordnance Department with Commission as Colonel.

**Guy E. Tripp**, formerly chairman of the Westinghouse Electric and Manufacturing Co., has been appointed by the War Department as chief of the Production Division of the Ordnance Department. He will supervise production of ordnance supplies with commission as colonel.

**Lucius French**, advertising manager of the National Motor Car and Vehicle Corporation, has been appointed a first lieutenant in the motor section of the Ordnance Department.

**E. G. Hosler**, formerly district manager of the Mid-Western Division of the Willys-Overland Co., has purchased the Overland-Houston Co., Houston, Tex., and is acting as president and general manager.

**H. S. Gardner** has resigned as district manager of the Chicago branch of the Willard Storage Battery Co. to manage the Mid-West Storage Battery Co. at Kansas City, Mo. Charles E. Frizell, formerly district manager of the branch at Cleveland, O., will succeed Mr. Gardner at Chicago.

**Samuel W. Gray** has joined the Aviation Reserve Corps as first lieutenant. He was for one year and a half engineer with Reed & Glaser, consulting engineers, at Indianapolis, Ind.

**Nat Doane, Jr.**, a former salesman with the Cadillac Automobile Co., Manchester, N. H, has joined the colors and is with the aviation section of the Signal Corps.

**L. L. Hopkins** has been made office manager of the Albany branch of the Fireston Tire and Rubber Co., succeeding G. E. Hoff. He formerly managed the credit department of the Firestone Boston branch.

**John R. Holmes** has organized the John R. Holmes Co., Detroit, Mich., to distribute Coffield tires throughout the entire state.

**Wesley A. Stanger** has resigned as president of the Mitchell Automobile Corporation, St. Louis. He was formerly president of the Ben Hur Co. of Missouri.

**E. E. Main**, who was formerly with Rajah Auto Supply Co., Bloomfield, N. J., has been appointed chief engineer of the Eclipse Manufacturing Co., Indianapolis.

**Frank A. Flint** has been made assistant sales manager of the central zone for the Chevrolet Motor Co., at Flint, Mich. He was formerly sales manager of the Hudson-Phillips Motor Car Co., St. Louis, Mo.

**E. B. Pierce** has been appointed consulting engineer in charge of the recently completed laboratory of the Republic Motor Truck Co., Alma, Mich.

**J. F. Dugan** has been appointed production manager of the Stanley Motor Co., Newton, Mass. He was formerly works superintendent of the Buick Motor Co. and production manager of the Chevrolet Motor Co.

Benjamin Gotfredson, New President of the Saxon Motor Car Corporation of Detroit.

Robert T. Walsh, in Charge of Sales and Advertising with Electric Heater Intake Co.

**Robert T. Walsh**, formerly advertising manager of the Maxwell Motor Co., and later in a similar position with the Briscoe Motor Co., has been appointed manager of sales and advertising for the Electric Intake Heater Co., Jackson, Mich.

**A. A. Lightfoot**, formerly Pennsylvania representative of the Marathon Tire and Rubber Co., Cuyahoga Falls, O., has been appointed division manager at Chicago, succeeding H. F. Smith, who has resigned.

**A. E. Vinton** has been made advertising manager of the National Motor Car and Vehicle Corporation, Indianapolis, Ind. He has been in the sales department for more than eight years, where he had charge of the National's export trade and still retains his position as export sales manager.

**H. M. Ross**, who has been engaged in the truck business for about 19 years, has been appointed district sales manager for the United States Motor Truck Co. in the Central West. He will make his headquarters in Chicago.

**A. D. McKenney**, formerly with the Gulf Refining Co., has joined the sales organization of the Pennsylvania Rubber Co. and is covering the state of West Virginia.

**C. H. Clement**, secretary and treasurer of the Bock Bearing Co., Canton, O., has resigned to take a much needed rest from his strenuous duties. He has not announced his future plans.

**William T. Harvey** has resigned as secretary, treasurer and general manager of the Harvey Spring Co., Racine, Wis. P. J. Barnard, sales and advertising manager of the company, has also resigned. W. L. Thorkelson has been appointed factory manager.

**Earl R. Martin**, formerly employment manager of the Curtis Aeroplane Co., has been appointed to similar position with the Templar Motors Corporation, Cleveland, O.

**Julius Holl**, advertising manager of the Link-Belt Co., Philadelphia, Pa., of which Charles Piez, vice president of the Emergency Fleet Corporation, is the head, has taken up publicity work under the latter's direction for the government.

**John F. Guider** has been elected vice president of the Cadillac Motor Car Co., Detroit, Mich., in charge of manufacturing. He was formerly factory superintendent of the Pierce-Arrow Motor Car Co. and an executive of that concern for more than 12 years.

**John H. Williamson** has resigned as head of the automobile and truck department of Padgitt Bros., Dallas, Tex., to accept the position of manager of the Auto Sales Co., Corsicana, Tex. Mr. Williamson has been for 20 years representing various automobile lines in the city of Dallas.

**H. L. Lawson** has joined the Iowa Vulcanizing Co. He was formerly office manager for the United States Tire Co. and has had extensive experience in the tire field, having been associated with some of the largest tire companies.

**Albert Sutton** is now salesman with the Bernstein Brothers, Fourth and Centre streets, Little Rock, Ark. He was formerly associated with the Schaad-Zimmerman Auto Co. In his new connection he will sell Cadillac cars.

**Arthur R. Stiles**, formerly assistant sales manager for the Tri-City Motor Co., Albany, N. Y., has joined the Studebaker Corporation of America, New York City.

**Frank C. Kip**, who was formerly sales promotion manager of the Packard Motor Car Co., has accepted his former position again as sales manager of the Motor List Co., Des Moines, Ia. He will make his headquarters in Detroit.

Otis C. Friend, Formerly With Mitchell Motors, Returns to United Motors as Vice President.

**Otis C. Friend**, who was under contract with the United Motors Corporation and who was virtually loaned by it to the Mitchell Motors Co. to fill its presidency, has returned to United Parts Co. as vice president.

W. G. Grieb Retires from Presidency of Ajax Rubber Co. After Eight Years of Service.

**W. G. Grieb**, for the past eight years president of the Ajax Rubber Co., has retired from the company and H. L. McClaren has been elected as his successor. Mr. McClaren has been vice president of the company since last March. Fred E. Dayton, who has been general sales manager of the company for many years, has been elected secretary and Stuart Webster, treasurer of the Racine Rubber Co., was elected vice president.

**E. M. McNamara** has been appointed district sales manager for the Atterbury Motor Car Co., Buffalo, N. Y., covering Western New York and Northern Pennsylvania. Norman Weber has been appointed city salesman of Atterbury trucks in charge of sales at Buffalo. J. G. Jackson is now district sales manager for Atterbury trucks in Illinois, Wisconsin, Iowa and Missouri. Mr. Jackson has had long experience in the truck business, having been previously connected with the White and Pierce-Arrow truck organizations.

**W. E. Blaine** has resigned as truck engineer of the Packard and is now captain in the Officers' Reserve Corps, Ordnance Department, stationed at Washington.

**Y. E. Stewart** is now sales manager of the Economy Motor Co., Tiffin, O. Mr. Stewart has been connected with the Cleveland manufacturers heretofore.

**W. H. Knowles** has resigned as chief engineer of the Saxon Motor Co., to accept a position as superintendent of the Hale & Kilburn Co.'s plant at Philadelphia, Pa.

**M. D. Davidson** has been appointed sales manager of the truck division of the Lau Iron Works Co., Youngstown, O., which manufactures the Elton truck unit for Cadillac cars.

**A. C. Faeh** has returned to his former position as advertising manager of the Baker R. & L. Co., Cleveland. Mr. Faeh was formerly sales and advertising manager of the Osgood Lens and Supply Co. of Chicago.

# *N. A. D. A. Memberships Are Open To All Dealers*

### Fred W. A. Vesper of St. Louis, Elected President, Will Start Membership Campaign.

The National Automobile Dealers' Association, formed last summer, and which has 575 dealer members, represented through the association members of the organization, has voted to admit dealers as members who are not affiliated with local associations. This decision was arrived at during the meeting of the association held in Chicago during show week and the bylaws were amended accordingly.

Fred W. A. Vesper of the Vesper-Buick Co., St. Louis, Mo., who was formerly a vice president of the association, was elected president. The officers are: Vice presidents, John A. MacAlman, Boston; Prince Wells, Louisville; treasurer, Thomas J. Hay, Chicago; directors, George W. Browne, Milwaukee; John H. Johnson, Boston; George D. McCutcheon, Atlanta; P. E. Chamberlin, Denver; P. H. Greer, Los Angeles; A. E. Maltby, Philadelphia; J. A. Graham, Minneapolis; C. A. Forester, Cleveland, O., and Dean Schooler of Des Moines.

It was voted to conduct a strong membership campaign and an educational propaganda among the trade for furthering trade and public interests. This work will also include the promotion of good roads. The present membership is from 15 states and is represented through local organizations as follows: Kansas City, 64; Los Angeles, 58; Chicago, 76; Boston, 44; St. Louis, 43; Milwaukee, 42; Minneapolis, 33; Des Moines, 30; Cleveland, 34; Dallas, 25; Albany, 17; Atlanta, 13; Worcester, Mass., 18; Louisville, 15; Oklahoma City, 20; Denver, 31; Davenport, 12. There are also a number of Philadelphia dealers listed as members. The membership fee is $10.

The association has received $5940 in dues since it was organized and has a surplus in the treasury of $2642.

Alfred Reeves, general manager of the National Automobile Chamber of Commerce, spoke to the dealers on the value of organization.

### ANNUAL MEETING OF GUARANTY SECURITIES CORPORATION.

At the annual meeting of the Guaranty Securities Corporation the following directors were added to the board of terms of three years: H. Mercer Walker, vice president of the Equitable Trust Co.; W. B. Joyce, president of the National Security Co.; William M. Ramsay, New York agent of the Merchants' Bank of Canada; E. S. Maddock, president, and Paul Fitzpatrick, vice president of the corporation. Other directors were re-elected.

Burt McDonald was elected a vice president of the company in charge of the Canadian office. H. L. Wynegar, vice president of the Guaranty Banking Corporation of Chicago. F. A. Franklin was elected treasurer and assistant secretary.

The Guaranty Securities Corporation is now located at 244 Madison avenue. having moved from the Equitable building.

### ROSS GEAR AND TOOL CO. ISSUES NEW CATALOGUE.

The Ross Gear and Tool Co., Lafayette, Ind., has issued a very neat and comprehensive catalogue covering its various products. The book is not only artistically gotten up, but is profusely illustrated and shows the detail of various articles. It will be sent to persons in the trade upon application to the company.

### BOOKLET EXPLAINING THE WELLS SELF-OPENING DIE.

A new 24-page booklet has just been issued by the Greenfield Tap and Die Corporation, Greenfield, Mass, containing considerable valuable information relative to one of their products, the Wells Self-Opening Die. To the garage or repair man, or, in fact, any machinist, this book should be of great value, because of its full description of a product which makes for speed and efficiency.

The Self-Opening Die is made in various sizes and many styles and is so designed that it may be used in practically any type of lathe or screw machine. It is made primarily to increase the speed of production. With this type of die the thread is cut upon the bolt or rod and at the end of the cut tripped open by hand or automatically and withdrawn without reversing the lathe spindle.

The book is furnished free and every machinist interested in thread cutting is invited to write for a copy.

# *Fiat Plant Sold to Dusenberg Motors Corporation*

### Small Part of Establishment Retained for Assembly of 1918 Cars.

The Duesenberg Motors Corporation has acquired the major part of the Fiat plant at Poughkeepsie, N. Y., and will use it to meet the needs of larger manufacturing facilities, which has already made necessary the expansion of the Duesenberg factory at Elizabeth, N. J. The Fiat company has retained a small portion of its plant to carry out the assembly of the Fiat cars for 1918 and to furnish repair parts and service.

# *Traded Old Ford for Oil Lease Worth $300,000*

### Deering J. Marshall, Oil Operator, Elected Vice President of the Jones Motor Car Co.

Deering J. Marshall, an oil operator, who three years ago traded a second-hand Ford, valued at $80 for an oil and gas lease, which he afterwards sold for nearly $300,000, has been elected vice president and a director of the Jones Motor Car Co. of Wichita, Kan., makers of the Jones line of cars and trucks.

Mr. Marshall did not rest upon his oars after his stroke of luck, but built his fortune up to the $2,000,000 mark, it is reported.

John Engstrom, a well known lumberman of Wichita, has also been elected a director of the Jones company.

### ENGINEERS NAMED TO REFINE LIBERTY MOTOR.

With the object of making the Liberty airplane engine meet the highest possible standards, the aircraft board has appointed a supervisory committee of expert engineers to watch the tests and suggest refinements and improvements.

The two members of the committee whose names have been made known are D. McCall White, vice president of the Cadillac Motor Car Co., and Henry M. Crane, vice president of the Crane-Simplex Co., both designing engineers of international reputation. A third member of the committee will be named by these two.

D. McCall White of the Cadillac Co. is probably the foremost authority in this country on the V-type principle of design, embodied in the Liberty engine. He came to this country from England to design the eight-cylinder V-type Cadillac engine, the sensational announcement of which was made in 1914. Before coming to the United States Mr. White was chief engineer of both the Daimler and the Napier. The Napier cars which he designed held several world's speed records and were conceded to be the finest automobiles built.

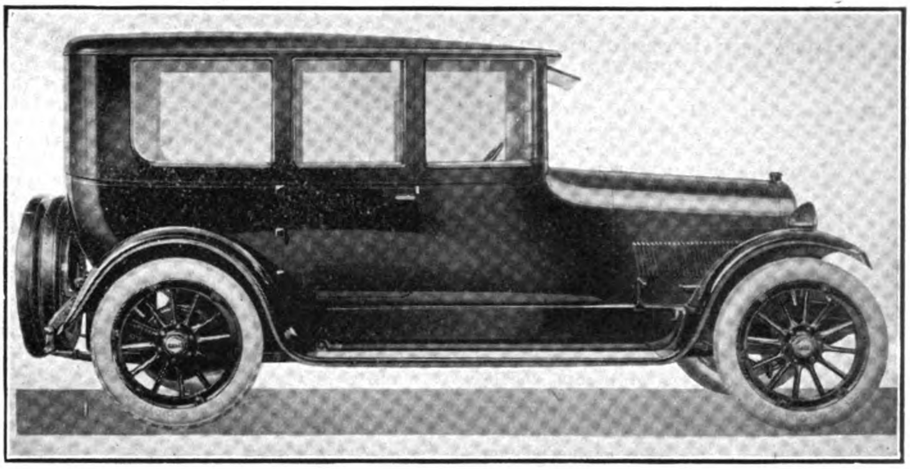
The six-cylinder power plant on which the Crane-Simplex Co. has established its reputation for mechanical excellence, is the result of H. M. Crane's engineering genius. Before going to Simplex his ability was widely recognized.

### EIGHT NEW MEMBERS IN MOTOR AND ACCESSORY ASSN.

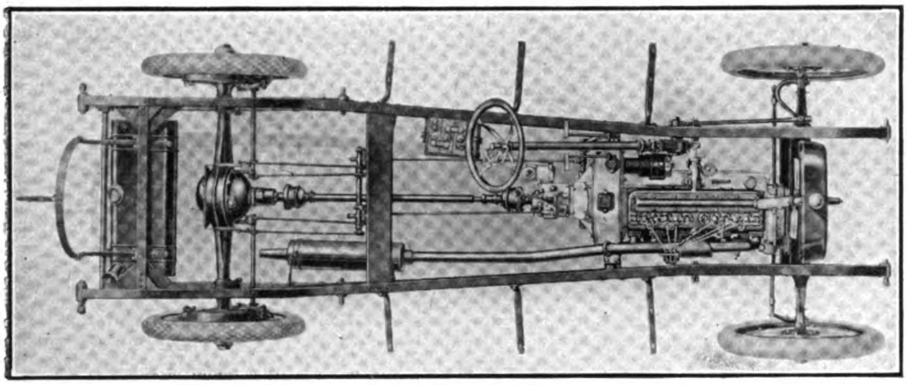
Eight new members were elected at the last monthly meeting of the Motor and Accessory Manufacturers' Association, and President C. W. Stiger appointed C. E. Thompson as national councilor and delegate and T. J. Wetzel and E. H. Broadwell as alternates.

# Six Cylinder Engine In New Case Car

**The J. I. Case Threshing Machine Co., Racine, Wis., makers of the Case car, have brought out a practically new model for 1918. A Continental six-cylinder engine is used in all models and the wheelbase has been lengthened to 125 inches. While greater power is available with the new engine, the car is more economical, as the weight has been cut down about 400 pounds. Cantilever springs have been replaced by underslung elliptics in the rear.**



New Case All Seasons Model, With Completely Closed Body, Permanent Top and Drop Windows.



Stripped Chassis of Case, Showing Sturdy Frame Members and New Six-Cylinder Engine.

CASE SIX SPECIFICATIONS.

| | |
|---|---|
| Engine | Continental |
| Cylinders | Six, cast in block |
| Bore | 3½ inches |
| Stroke | 5¼ inches |
| Valves | In side |
| Horsepower (S. A. E.) | 29.4 |
| Ignition | Westinghouse |
| Starting and lighting | Westinghouse |
| Clutch | Disc |
| Gearset | Three speed |
| Wheelbase | 125 inches |
| Wheels | Wood |
| Tires | 35x4½ |
| Rear axle | Three-quarter floating |

Price All Seasons Models, $2375.

# NEW CONCERNS RECENTLY INCORPORATED

## Monthly Record of New Business Houses for which Charters Have Been Issued in the Various States and Classified According To Nature of Business

### NEWLY ORGANIZED MANUFACTURERS OF CARS.

**Phoenix, Ariz.;** American International Railways Corp.; $10,000,000; to manufacture, buy and sell motor vehicles; H. W. Barkley, C. R. Hudson, R. E. Mitchell.

**Los Angeles, Cal.;** The Southern California Truck Manufacturing Co.; $150,000; H. L. Bidelman, William P. Bidelman, Claud R. Crump, C. B. McCall, Frank B Romo.

**Dover, Del.;** Commercial Car Body Corporation; $1,500,000; J. H. Hughes, M. W. Cole, M. S. Pollock.

**Wilmington, Del.;** The Consolidated Motors Co. of America; $10,000,000; to manufacture, sell and deal in and with trucks and motors; M. L. Horty, K. E. Longfield.

**Dover, Del.;** National Tractor and Machinery Co.; $1,000,000; G. W. Lawson, G. D. Harris, W. D. Bradford, J. M. Wait, H. McKay, A. M. Windsan.

**Dover, Del.;** Quaker City Motor Truck Manufacturing Co.; $1,000,000; to manufacture automobiles and trucks; Joseph D. Morelli, Charles L. Guerin, John Morelli.

**Wilmington, Del.;** The Badger Manufacturing Corporation; $300,000; to manufacture and sell automobile parts.

**Savannah, Ga.;** H. J. Lamar Co.; $25,000; to manufacture and sell motor cars; H. J. Lamar, F. A. Goss, J. L. Evans.

**Chicago, Ill.;** Presto Passenger Truck Co.; $400,000; to manufacture automobiles; M. H. Lalor, G. H. Gibney, W. E. Fitzgerald.

**Sioux City, Ia.;** White Motor and Tractor Co.; $50,000; Thomas E. Peck, P. P. Wermerskirchen.

**Boston, Mass.;** Republic Truck Co.; $100,000; George A. Patten, James M. Linscott, R. W. Linscott.

**Bay City, Mich.;** The Union Motor Truck Sales Co.; $10,000; L. W. Hine, H. E. Buck, George Beaulieur, James R. Tanner, Walter Fos, William H. Boutell, Howard Woodworth.

**St. Louis, Mo.;** The Zelle Tractor Co.; $1,000,000; to manufacture tractors.

**Brooklyn, N. Y.;** The Aera Manufacturing and Accessories Co.; $10,000; R. Sidel, C. D. Brandt; to manufacture airplanes and parts.

**New York, N. Y.;** Liberty Automobile Co.; $20,000; M. Heiborn, C. Heiborn.

**Hamilton, O.;** Vail-Lentschler Farm Tractor Co.; $500,000; to manufacture farm tractors; William J. Devanney; Thomas L. F. Morgan, A. Munnion, M. E. Ostendorf, Joseph Lemkuhl.

**Pittsburgh, Pa.;** Duke Motor Co.; $500,000; to manufacture motor vehicles; A. M. Holloran, S. A. Williams, Ferris Giles.

**Cleveland, O.;** Simmons Motor Car Co.; $50,000; John L. Cannon, Ben B. Wickman, W. H. Boyd, B. M. Butler, H. E. Werner.

**Fort Worth, Tex.;** Texas Motor Car Association, Flat Iron building; $2,000,000; build plant to manufacture automobiles, trucks and tractors; president and manager, J. C. Vernor; vice president, William Ginnuth; secretary, C. F. Sanders.

### GARAGES AND REPAIR SHOPS NEWLY CHARTERED.

**St. Petersburg, Fla.;** Boardman, Vogel & McRae; $15,000; to conduct a general motor car and garage business; Paul R. Boardman, George R. McRae.

**Newark, N. J.;** The Guaranty Garage; $10,000; Frances B. Stewart,. Charles B. Stewart, Charles H. Stewart, May C. Vanderhoof.

**Passaic, N. J.;** Marchese Auto Repair Co.; $25,000; William C. Marchese, Phillip C. Marchese, Joseph Marchese.

**Passaic, N. J.;** Standard Garage and Motor Sales Co.; $10,000; to deal in automobiles; Fred Domina, William Bavelaar, Walter Kuenzel.

**Union, N. J.;** Mueckes Garage; $10,000; E. C. Muecke, C. E. Muecke, H. A. Muecke.

**Brooklyn, N. Y.;** Midwood Garage; $10,000; E. W. Brecht, H. Speth, J. Stoehr.

**Buffalo, N. Y.;** Allen Street Garage; $30,000; G. L. Herr, C. T. Smith, C. D. Stephan.

**New York, N. Y.;** Oak Garage Corporation; $20,000; M. J. Riether, A. G. Quinn, C. E. Meier.

**Utica, N. Y.;** The Utica Garage Co.; $10,000; A. P. Bennett, G. L. Petter, A. G. Senior.

**Ironton, O.;** The Ruhlman and Edward Garage Co.; Luella Ruhlman, Otho Edwards, B. F. Coo, Effie Martin.

**Port Clinton, O.;** The Port Clinton Standard Garage Co.; $10,000; Frank Holt.

## PARTS AND FITTINGS MAKERS INCORPORATED.

**Birmingham, Ala.;** The Bradley-Matthews Motor Co.; $2000; president, T. M. Bradley; vice president and general manager, J. R. Matthews; secretary and treasurer, T. M. Bradley.

**Los Angeles, Cal.;** The Dustin-Roman Auto Top Co.; $25,000; George F. Dustin, John Roman, W. J. Miller, M. M. Moore.

**San Francisco, Cal.;** O'Neil & Hayes, Inc.; $35,000; to deal in automobile engines and vehicles.

**Wilmington, Del.;** Wales Motors Corporation; $2,000,000; to manufacture and sell all kinds of motors.

**Savannah, Ga.;** Holcomb-Williams-Blitch Motors Co.; $20,000; J. H. Holcomb, L. B. Williams, J. G. Blitch, H P. Jones.

**Edwardsville, Ill.;** Giese Motor Co.; $10,000; Olin H. Giese, Gilbert St. Giese, A. H. Vannahme.

**Indianapolis, Ind.;** Ideal Tool Works; $20,000; to manufacture tools, implements and automobile parts; E. L. Crum, Edward C. Klingholz, Jesse W. Titus.

**Detroit, Mich.;** Automatic Screw Machine Co.; $25,000; J. H. Mailhot, B. I. Mailhot, E. L. Olney.

**Detroit, Mich.;** Pronvost Wheel Co.; $40,000; Joseph Pronvost, Floyd Warner, J. W. Biddle.

**Detroit, Mich.;** F. F. Wood Motor Co.; $5000; F. W. Todd, F. F. Wood, W. L. Mash.

**Kansas City, Mo.;** Massey Motor Co.; $18,000; H. E. Massey, S. G. Massey, R. N. Taylor, Elsie W. Massey.

**Camden, N. J.;** Automobile Appliance Co.; $10,000; George D. Van Sciver, J. Howard Van Sciver, Harry J. Stockum.

**Texico, N. M.;** Cannonball Motor Co.; $10,000,000; C A. Roberson, W. L. Mansfield, J B. Hanlin, D. A. Randall, J. C. Milne.

**Manhattan, New York City, N. Y.;** R. D. King Motors, Inc.; $25,000; to manufacture motors, engines and machines; R. D. King, W. Selner, F. H. Rowland.

**Manhattan, New York City;** National Clutch Co., Inc.; $100,000; to manufacture clutches for autos; E. N. Baar, G. H. Empey, F. V. Sheehan.

**New York, N. Y.;** United States Magneto Co., Inc., $10,000; to manufacture magnetos; Charles R. Allison, J. J. McGrath, Allen L. Story.

**Cleveland, O.;** The Osborne Storage Battery Co.; $10,000; Carroll K. Osborne, Earl H. Jaynes, C. D. Mason, M. L. Hoffman, A. D. Carlton.

**Frankfort, O.;** M. M. Allen Motor Co.; $15,000; M. M. Allen, Harry Penn and T. B. McGregor.

**Hamilton, O.;** Liberty Machine Tool Co.; $100,000; F. K. Vaughn, A. Ballinger.

**Springfield, O.;** Burke Motor Co.; $9000; Charles J. Burke, James A. Linn, Forest S. Wolf.

**Warren, O.;** Trumbull Republic Motor Co.; $10,000; W. M. Kastriner, Ben Feniger.

**Youngstown, O.;** York Motor Sales Co.; $10,000; C. A. Gifford, W. A. Gifford, James J. Hill, L. M. Salsgiver, M. Salsgiver.

**Muskogee, Okla.;** Eastern Oklahoma Motors Co.; $10,000; C. H. Brunson, C. E. Trumble, R. Broaddus.

**Yoakum, Tex.;** Cook Motor Co.; $10,000; Charles Cook, H. F. Cook, A. W. Swenson.

**Milwaukee, Wis.;** The American Oil Motors Co.; $1,000,000; to manufacture automobile truck and airplane engines; A. C. Lingelbach.

## DEALERS IN AUTOMOBILES AND MOTOR TRUCKS.

**Phoenix, Ariz.;** Smith-Hughes & Co.; $30,000; to deal in wholesale and retail cars and supplies; W. Taylor Smith, C. K. Hughes, W. J. Schiedler.

**Dover, Del.;** Morris Taxi Co.; $25,000; to operate automobiles; Morris Lubetkin, Abraham Bernstein, Morris Deutsch.

**Wilmington, Del.;** American Motors Corporation of Pennsylvania; $30,000; to deal in and with automobiles; A. M. Halloran, S. A. Williams, E. Unfried.

**Wilmington, Del.;** Fulton Truck Co. of Philadelphia; $200,000; to buy and deal in automobiles and motor boats.

**Quincy, Fla.;** Shaw Auto Co.; $25,000; C. E. Shaw, W. B. Malone.

**Chicago, Ill.;** Distributing Branch Ehman Tire and Rubber Co.; $1000; Isaac B. Lipson, Samuel L. Chosen, Thomas M. Whitson.

**Indianapolis, Ind.;** The Frank Hatfield Co.; $5000; to deal in and repair automobiles; Frank D. Hatfield, Sidney J. Hatfield, Mary L. Hatfield.

**Indianapolis, Ind.;** Huff-Buick Sales Co.; $10,000; to buy and sell automobiles; Charles A. Huff, George G. Kuhler, Mary E. Huff, Mary Kuhler.

**Worcester, Mass.;** The Simpson Trucking Co., Inc.; $6000; president, S. E. Simpson; treasurer, Helen Ross; clerk, Ruth E. Price.

**Lowell, Mich.;** The Overland-Lowell Co.; $10,000; John R. Keiser, John T. Tucker, Clinton E. Wood.

**St. Louis, Mo.;** Neskov & Mumperow Motor Car Co.; $15,000; to do a general automobile business; J. M. Neskov, Adolphus Mumperow.

**St. Louis, Mo.;** St. Louis Guaranteed Tread Co.; $3000; to deal in automobiles and accessories; Charles E. Henderson, Henry Wagner, Mary Moyes.

**Elizabeth, N. J.;** The Elizabeth Trucking Co.; $10,000; to conduct a general trucking business; Albert F. Bender, Minnie J. Locher, Augustus J. Bender.

**Newark, N. J.;** Dunne Trucking Co.; $50,000; general trucking.

**Newark, N. J.;** Fort Motors, Inc.; 37 Bloomfield avenue; $25,000; general automobile business.

**Newark, N. J.;** The Franklin Motor Car Co. of Newark; $50,000; Kent Bender, Anna M. Williams, Frederick J. Feurhach, Jr.

**Newark, N. J.;** Hupmobile Sales Co.; $100,000; to conduct a general automobile business.

**Trenton, N. J.;** Clinton Hill Garage, Inc.; $100,000; to deal in automobiles; William J. Hodgkinson, Louis Enderlee, Laura H. Hodgkinson.

**Brooklyn, N. Y.;** MacRoberts Auto Co.; $10,000; T. J. Donohus, W. T. MacRoberts, M. E. MacRoberts.

**Buffalo, N. Y.;** Jewel Taxi Service; $5000; G. L. Jewel; F. P. Flissner, A. Keeney.

**Manhattan, N. Y.;** Dellon Sales Co.; $10,000; to deal in automobiles and tire business; W. J. Wilson, A. Olsen, E. W. Linsman.

**Manhattan, New York City, N. Y.;** Harlem Auto Trucking Co.; $5000; J. Thòmas A. Viletti, P. Korn.

**New York, N. Y.;** Holmes Motor Car Co. of New York, Inc.; $50,000; to conduct an automobile business; K. A. Siemere, R. A. Flynn, R. R. Carlson.

**Cleveland, O.;** Northern Ohio Motor Transportation Co.; $10,000; Harvey O. Yoder, Monta M. Rich.

**Cleveland, O.;** The Valley Motor Trucking Co.; $25,000; S. H. Holding, Tracy H. Duncan, M. H. Ordner, B. M. Parker, E. Held.

**Columbus, O.;** The Overland Dunkle Co.; $160,000; C. T. Dunkle, C. R. Arenschield, A. C. Ogden, T. P. Pinkerton, H. G. Putnam.

**Huntington, Pa.;** McKinley Storage Battery Co.; $5000; to operate battery service stations; T. J. McKinley, W. R. Power. C. W. Marcum, J. O. Marcum, H. S. Newton.

**Meadville, Pa.;** The Meadville Auto Co.; $8000; to deal in automobiles; C. L. Rimlinger, M. M. Clancy, Clement M. Enger.

**Philadelphia. Pa.;** The Philadelphia Motor Transportation Co.; $25,000; to do a general hauling and delivery business; Orpheus E. Bell, Louis Kayney, Samuel Levick, R. T. Moyer, A. H. Woldow.

**Memphis, Tenn.;** Southern United States Truck Sales Co.; $10,000; J. G. Livar, E. C. Boykin, J. M. Hughes, J. W. Baker, Jr., H. H. Ilomoll.

**Marshall, Tex.;** Lothrop Auto Co.; $5000; M. Lothrop, Sr., Grafton Lothrop, M. Lothrop, Jr.

## ACCESSORIES, EQUIPMENT AND SUPPLIES.

**Phoenix, Ariz.;** Miller Brake Sales Co.; $100,000; to manufacture, purchase and sell fixtures, brakes and accessories; H. M. Harrison, D. M. Foster.

**Phoenix, Ariz.;** Perfection Auto Window Co.; $100,000; to manufacture, buy and sell cars and accessories; I. J. Lipsohn, H. M. Harrison.

**Wilmington, Del.;** The Parker Tire and Rubber Co.; $750,000; F. D. Buck; M. L. Horty, K. E. Longfield.

**Chicago, Ill.;** Empire Auto Sheet Metal Works; $10,000; Howard E. Leopold, Sidney Adler, R. Ronson.

**Chicago, Ill.;** Fort Wayne Tire and Rubber Manufacturing Co.; $500,000; to manufacture motor car tires and rubber products; L. E. Kraft, J. C. Brown, H. J. Karr.

**Chicago, Ill.;** Marvel Lubricating Co.; $10,000; D. E. Hemstreet, P. W. Trelcar, A. L. Isberg, Benjamin F. Tubergen.

**Chicago, Ill.;** Ogden Motor Supply Co.; $100,000; Frank Posvic, Otto Ring, James Pavlisek.

**Chicago, Ill.;** Vulcano Tire and Vulcanizing Co.; $2400; Harry L. Solomon, Julius Riman, Sam Kaplan.

**Chicago, Ill.;** Washington Tire and Vulcanizing Co.; $10,000; Abraham Seelig, I. Morris Amter, Leo Seelig.

**Des Moines, Ia.;** The Motor Sales Co.; J. I. Garrett, Paul S. Wells.

**Des Moines, Ia.;** Iowa Tire Co.; $2000; A. C. Gregg, Milton Rainsberg.

**Atchison, Kan.;** Universal Tire Storage Co.; $15,000.

**Wichita, Kan.;** Doan Tire and Rubber Co.; $20,000; Floyd L. Doan, A. F. Slaght, A. B. Eisenhower.

**Lawrence, Mass.;** The Lenane Supply Co., Inc.; $25,000; to manufacture automobile sundries and mill supplies; president, Frank E. Lenane; Daniel J. Lenane, H. V. Lenane.

**Detroit, Mich.;** Locke Pattern Works; $15,000; D. H. Locke, Mary R. Locke, T. E. H. Black.

**Muskegon, Mich.;** Advance Brass Manufacturing Co.; $25,000; Oscar Berg, Wallace Foote, Felix St. Louis.

**Newark, N. J.;** Hanley Rubber and Tire Co.; $50,000; to deal in rubber tires; David M. Hanley, Mathews J. Ready, Morris Hoffman.

**New York, N. Y.;** American Automatic Tire Corporation; $1,000,000; F. D. Buck, M. L. Horty, K. E. Longfield.

**New York, N. Y.;** Consumers' Tire and Rubber Corporation; $100,000; N. M. Blackley, E. D. Reecks, A. R. Aboud.

**Manhattan, New York City, N. Y.;** Iron-Clad Tire Co.; $10,000; S. A. Paul, D. D. Duetseh, J. L. Diamond.

**New York, N. Y.;** Segate Tire and Rubber Co.; $12,000; H. H. Jacobson, C. A. Weldon, S. Bernheim.

**Minot, N. D.;** Northern Motor Supply Co.; $25,000; C. A. Johnson, W. M. Smart, O. T. Owen.

**Columbus, O.;** Cleveland Rubber Corporation of Cleveland; $3,000,000; to make tires and other rubber products.

**Youngstown, O.;** The S. Q. S. Rubber Co.; $10,000; E. B. Morledge, G. W. Dutch, M. G. Lyle, E. M. Mincher, J. T. Shellenberger.

**Youngstown, O.;** Youngstown L. & M. Auto Supply Co.; $25,000; Emil P. Linberger, Fred Linberger, Helen Linberger, Earnest A. Mortiz, Margurite Linberger.

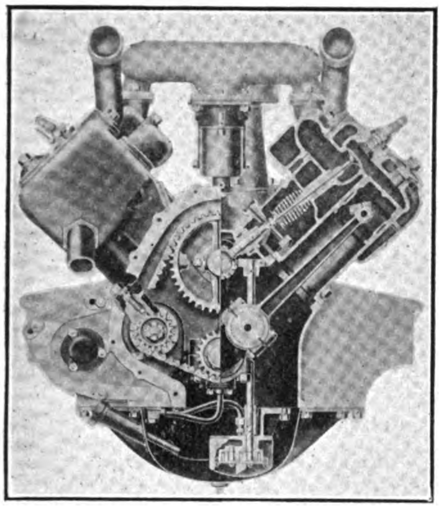
**Oklahoma City, Okla.;** Capital Motors Co.; $25,000; G. Ogden, C. L. Loos, Jr., J. Densford.

**Oklahoma City, Okla.;** Mid West Tire and Accessory Co.; $25,000; C. Carpenter, Frank Freeman, F. F. Monroe.

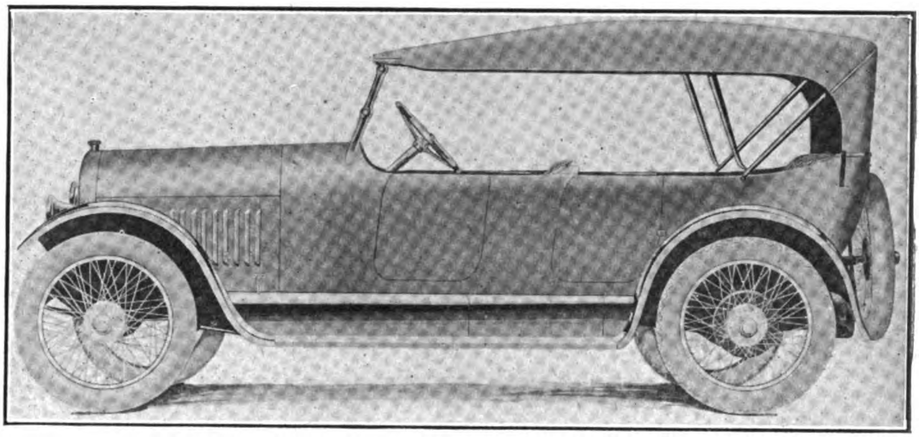
**Tulsa, Okla.;** Union Tire and Rubber Co.; $10,000; John Boling, E. L. Tieche, E. J. Quigley.

**Shelby County, Tenn.;** Memphis Tire and Vulcanizing Co.; $10,000; Y. E. Pridy, A. T. Davis, L. J. Davis, M. H. Ditching, H. D. Whitehead.

**Shiner, Tex.;** Lone Star Motor and Supply Co.; $15,000; Anna A. Bozka, M. L. Bozka, J. E. Bozka.



**King Refinments: Heated Intake Manifold; Mushroom Tappets; Barrel Type Valve Spring and Morse Silent Chains.**



**New Model Four-Passenger, Eght-Cylinder King Foursome. A Roomy, High Powered Car with 120-Inch Wheelbase. Has Been Tested Over Severe Roads for ThouThousands of Miles with Gears Locked in High**

# RECORD OF NEW BUILDING PLANS IN FEBRUARY

## Contracts Made and Plans Contemplated for Alterations or the Building of Garages, Repair Shops, Seivice Stations and New Plants.

### Contemplated Plans and Specifications.

**Dotham, Ala.;** Hallman & Co.; one-story garage, 40x100.

**Montgomery, Ala.;** Hallman & Co.; one-story garage and service station, 40x150.

**Oneonta, Ala.;** A. L. Bains; one-story garage, 108x50.

**Texarkana, Ark.;** Eugene Sanders; one-story garage, 36x100.

**Los Angeles, Cal.;** William Garland; two-story garage at 18th and Figueroa streets; 97x155; $50,000.

**Los Angeles, Cal.;** Frank Thomas; one-story garage at 1042 S. Grand avenue; 50x160; $15,000.

**Sacramento, Cal.;** Dunning Brothers; one-story garage, 160x240; $10,000.

**Santa Barbara, Cal.;** E. W. Alexander; one-story garage; $60,000.

**Denver, Col.;** Jesse E. Fleming; two-story garage at 1126 Broadway; $15,000.

**Denver, Col.;** F. Bodefelt; one-story garage at 247 Broadway; $15,000.

**Hartford, Conn.;** John Frary, 465 Albany avenue; two-story public garage, 45x49; $20,000.

**New Haven, Conn.;** Isaac Weiner, 105 Howe street; two-story garage, 40x40.

**New Haven, Conn.;** Samuel Alterman, 24 Asylum- street; one-story garage, 25x40.

**New Haven, Conn.;** Joseph Santilla, 132 Columbus avenue; two-story public garage, 60x130; $30,000.

**Kissimmee, Fla.;** Walker & Bryan; one-story garage, 50x100.

**Chicago, Ill.;** H. O. Lund, care G. E. Pearson, 1930 N. Keystone street; one-story garage and shop; $8000.

**Chicago, Ill.;** Brooks estate; one-story garage at 127 N. Dearborn street; 98x120; $20,000.

**Chicago, Ill.;** Martin J. Christensen; one-story garage at 5531-33 S. State street; 50x175.

**Chicago, Ill.;** S. S. Hermann; one-story garage, 50x162; $20,000.

**Chicago, Ill.;** Darling & Son; one-story garage at 4208-16 S. Ashland avenue; 100x120; $18,000.

**Chicago, Ill.;** Scully Steel & Iron Co.; one-story garage at 24th and Ashland avenue; 45x120.

**Chicago, Ill.;** Davidson & Waiss, 53 W. Jackson Boulevard; one and two-story garage, 92x65.

**Chicago, Ill.;** Home Made Sausage Co., 4500 W. 22nd street; one-story garage, 40x52; $6000.

**Streator, Ill.;** Lamberson & Hunt; one-story garage, 150x100.

**Blue Grass, Ind.;** H. D. Schroeder; one-story garage, 30x120.

**Clinton, Ind.;** Edward Ruby and H. A. Gordon; two-story garage, 50x100; annex, storage room, 58x132.

**Franklin, Ind.;** Vaught Auto Co.; one-story garage, 54x144.

**Gary, Ind.;** C. S. Bunnell; one-story garage, 50x125; $45,000.

**Hammond, Ind.;** Walter Wolf; one-story garage, 50x128.

**Indianapolis, Ind.;** A. M. Rosenthal; one-story garage, 100x200; $80,000.

**Monticello, Ind.;** L. K. Witz; one-story garage, 140x78.

**Richmond, Ind.;** McConaha Co., 11 S. 4th street; three-story auto sales room and garage, 264x51x41; $75,000.

**Davenport, Ia.;** Standard Oil Co.; one-story oil filling station; $35,000.

**Ft. Dodge, Ia.;** Rehder-Cadillac Co.; one-story garage, 60x140.

**Fort Madison, Ia.;** Perfection Tire and Rubber Co.; one-story garage, 22x40; $20,000.

**Knoxville, Ia.;** Longaker Noah; one-story garage, 20x110.

**Manson, Ia.;** Manson Auto Co.; one-story garage, 50x100; $10,000.

**Oxford, Ia.;** R. K. Luse; one-story garage, 47x125.

**Dodge City, Kan.;** Standard Oil Co.; one-story service station; $50,000.

**Hutchinson, Kan.;** Standard Oil Co., 10th and Santa Fe streets; one-story oil filling station, 12x24; $3000.

**Severy, Kan.;** Somger & Rowe; one-story garage, 50x150.

**Wichita, Kan.;** Goodin Motor Co.; one-story garage; $10,000.

**Paducah, Ky.;** J. G. Rehkopf; automobile tire factory; capacity 80 tires every 10 hours; purchased machinery.

**Biddeford, Me.;** Biddeford Motor Mart; two-story garage at 297 Main street; $25,000.

**Baltimore, Md.;** Patrick J. Cushen; one-story garage, 150x250.

**Baltimore, Md.;** C. L. Hartman and J. L. Ridgway; one-story garage, 75x117.

**Baltimore, Md.;** Joseph C. Smith; one-story garage at 3427 Greenmount avenue, 80x150; $7500.

**Baltimore, Md.;** Milburn Brothers; two-story garage at 3104 W. North avenue, 50x150.

**Baltimore, Md.;** Joseph M. Curren, 501 N. Pulaske street; one-story public garage, 150x200.

**Baltimore, Md.;** Bartlett-Hayward Co.; Scott and McHenry streets; one-story brick and concrete garage, 41x100; at Gunpowder and Wicomico streets.

**Baltimore, Md.;** Monument Plate Apartment Co.; three-story garage, 21.5x25; rear 704 Cathedral street.

**St. Helena, Md.;** War Department will build automobile assembling plant to cost several million dollars for buildings and machinery.

**Belmont, Mass.;** John Butt; one-story garage at Belmont and Worcester streets, 60x110.

**Boston, Mass.;** James F. Davern; one-story garage at 127-141 Stanwood street, 100x100.

**Boston, Mass.;** Chardon Realty Co.; six-story garage at 66-82 Chardon street, 124x80.

**Boston, Mass.;** Abraham Kwinsky, 43 Tremont street; one-story public garage, 720x730.

**Brookline, Mass.;** Morris Rudnick; one-story garage, 85x225; $50,000.

**Chelsea, Mass.;** John Magnus; one-story garage at 70 Murray street, 90x17; $9000.

**Salem, Mass.;** Joseph Dube; one-story garage at 52 Pingree street, 40x80; $4000.

**Springfield, Mass.;** Robert Sauers; one-story garage at 719 Worthington street, 50x111; $5000.

**Benton Harbor, Mich.;** Scott & Toland; one-story garage, 40x135.

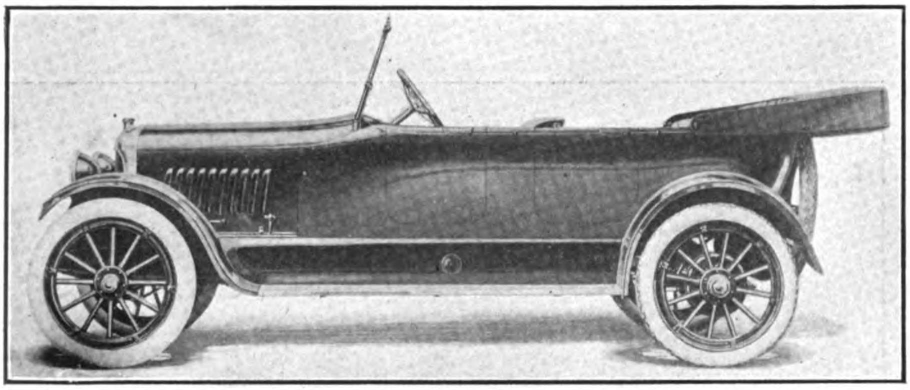
**Cedar Rapids, Mich.;** E. B. Thurston; one-story garage, 68x126; $5000.

**Sobewaing, Mich.;** Gremel & Schnepp; one-story garage, 110x65.

**Thompsonville, Mich.;** Dixon & Hammer; one-story garage, 52x100; $12,000.

**Albert Lee, Minn.;** Motor Jnu; one-story garage, 200x60; $25,000.

**Cass Lake, Minn.;** Richards Auto Co.; one-story garage, 50x80.



**The 1918 Grant Six Five-Passenger Touring Car. Price, $1055. Extensive Refinements in Both Chassis and Body Feature the New Models. Radiator and Hood Are Higher; Engine Has Balanced Crankshaft Forced Feed Oiling and Larger Bearings All Around; Rear Cantilever Springs Lengthened to 48 Inches.**

**Hackensack, Minn.;** W. D. Sanford; one-story garage, 75x125.

**St. Paul, Minn.;** John Wardell; one-story garage at Cedar and Minnesota streets; $12,000.

**Clarksdale, Miss.;** L. G. Hurloutt; one-story garage; $5000.

**Jackson, Miss.;** Mrs. W. J. Croom; one-story garage, 50x175.

**Stockton, Miss.;** H. E. Miller and F. H. Babbs; one-story garage, 50x80.

**St. Louis, Mo.;** Richard Maderacks, 4430 Arsenal street; one-story public garage. 50x100; $12,000.

**Dillon, Mont.;** J. F. Bishop; one-story garage, 50x140.

**Hingham, Mont.;** C. W. Carter and W. A. Dodder; one-story garage, 50x80.

**Alliance, Neb.;** Lowry & Henry; one-story garage, 50x140.

**Cook, Neb.;** H. H. Echacht; one-story garage, 53x110; $18,000.

**Kearney, Neb.;** J. W. Patterson; one-story garage, 125x56; $10,000.

**Lincoln, Neb.;** National Security and Investment Co., 622 Security Mutual Life building; two-story garage, 150x142; $30,000.

**Lincoln, Neb.;** G. E. Thompson; one-story garage, 50x142; $8000.

**Lincoln, Neb.;** C. H. Roberts, 2105 E. street; one-story garage 50x142; $7000.

**Omaha, Neb.;** M. O. Mawe; one-story garage at 804 S. 21st street; $12,000.

**Omaha, Neb.;** Selam Realty and Construction Co.; one-story garage at 2558-60 Leavenworth street; $40,000.

**Omaha, Neb.;** E. T. Heyden, 1614 Harney street; one-story garage, 99x115; $10,000.

**Manchester, N. H.;** T. E. and M. T. Burke; three-story garage, 62x150.

**Camden, N. J.;** Camden Auto Radiator Repair Co., 509 Arch street; two-story auto machine shop, 47x60; $10,000.

**Jersey City, N. J.;** Armour & Co., 224 17th street; one-story garage, 100x100; $6000.

**Jersey City, N. J.;** Egan Waste Co.; one-story garage at 17-37 Maxwell street; $5950.

**Albany, N. Y.;** Drooz-Reiter Co., 346 Broadway; three and five-story garage, 180x33x66; $30,000.

**Albany, N. Y.;** Linz Brothers, 138 Central avenue; one-story garage, 33x50; $2500.

**Brooklyn, N. Y.;** Cranford Co., 190 Montague street; one-story garage, 50x150; $35,000.

**Brooklyn, N. Y.;** John H. Duffy, 238 E. 27th street, New York City; one-story garage, 109x140; $10,000.

**Brooklyn, N. Y.;** Adeline Gluchenhaus, 373 Ralph avenue; one-story garage, 50x100; $8000.

**Brooklyn, N. Y.;** B. A. V. Wing; one-story garage, 30x130; $13,000.

**Brooklyn, N. Y.;** C. Flezenhardt; one-story garage, 40x100; $10,000.

**Brooklyn, N. Y.;** A. E. D. Baun;one-story garage at Atlantic and Clinton avenues; 115x75.

**Brooklyn, N. Y.;** A. P. L. Atterbury; one-story garage at Hudson avenue and Lafayette street, 99x100.

**Brooklyn, N. Y.;** Henry W. Kimble; one-story garage, 21x68; $4000.

**Brooklyn, N. Y.;** Asher Dann, 1251 12th avenue; one-story public garage, 50x100; $10,000.

**Brooklyn, N. Y.;** S. H. C. Construction Co., Inc., 191 S. 9th street; one-story public garage, 100x106; $2500.

**Brooklyn, N. Y.;** Henry E. Kordes, 243 Moffat street; eight one-story garages, 40x40; $2500.

**Brooklyn, N. Y.;** Shampan & Shampan, 772 Broadway; two-story public garage, 50x100; $35,000; two-story public garage; $50,000.

**Buffalo, N. Y.;** T. R. Wallace, care G. Morton Wolfe, 1377 Main street; one-story public garage and show room, 78x120. Lessee, Quale Garage Co., Inc., 2675 Main street.

**New York, N. Y.;** P. F. Herpershansen, 43 Thompkins street; two-story garage, 62x100; $15,000.

**New York, N. Y.;** Edward Caterson, 17 Battery Place; one-story garage, 55x75; $9000.

**New York, N. Y.;** Willoughby Garage Corporation; one-story garage at 238-256 W. 19th street, 154x92.

**New York, N. Y.;** P. Schalita; two-story garage at Washington avenue and 182nd street, 100x100; $50,000.

**New York, N. Y.;** Jacob Ruppert; one-story garage at 268-74 E. 91st street, 105x205; $30,000.

**New York, N. Y.;** Lord & Taylor; one-story garage at 153-61 E. 24th street, 110x197.

**New York, N. Y.;** Burns Brothers; one-story garage at 323-25 W. 96th street, 100x50; $40,000.

**New York, N. Y.**; Benedicta Vetter, 2259 Washington avenue; one-story garage, 50x130; $15,000.

**New York, N. Y.;** Ludin Realty Co., 261 W. 34th street; one-story public garage, 100x100; $35,000.

**New York, N. Y.;** Jacob Kapetwosky, 58 Moore street; two-story garage, 44x100; $12,000.

**New York, N. Y.;** S. B. Steinmetz, 931 Fox street; one-story garage, 30x270; $12,000.

**Saratoga Springs, N. Y.;** J. B. White Co., 2 Font street; one-story garage, 104x64; $15,000.

**Lenoir, N. C.;** R. L. Gwyn; two-story garage; $17,000.

**Washington, N. C.;** Pamlica Chemical Co.; one-story brick and concrete garage and repair shop, 80x210; metal roofing, cement floors.

**Akra, N. D.;** B. S. Thorwaldson; one-story garage, 50x100.

**Beach, N. D.;** W. C. Schultz; one-story garage, 50x140.

**Akron, O.;** Mack McGinness, 112 W. North street; one-story private garage, 22x26; $3000.

**Canton, O.;** W. N. Dickey & Son; one-story private garage, 46x110; $8000.

**Cleveland, O.;** J. P. Stotter Co.; one-story garage at 8213 Euclid avenue, 69x104; $50,000.

**Cleveland, O.;** Morors Realty Co., 1206 Huron road; one-story garage and service station, 56x120; $15,000.

**Cleveland, O.;** Mrs. Pauline Roth, 214 Surrey road, Cleveland Heights, O.; one-story garage, 100x130; $40,000.

**Columbus, O.;** The Down Town Realty Co.; one-story garage and sales room; $20,000.

**Elyria, O.;** Haddaway & Mendelson, 603 Broad street; two-story garage, 56x165; $50,000.

**Elyria, O.;** Lorain County; E. L. Ellenberger, clerk, court house; one-story private garage, 24x38; $3000.

**Franklin, O.;** R. A. McCutcheon; one-story garage, 50x150.

**Woodsfield, O.;** T. E. Drum; two-story commercial garage, 66x120; $20,000.

**Muskogee, Okla.;** Harry Kitto; one-story garage, 107x104.

**Oklahoma City, Okla.;** McClelland Gentry Motor Co.; one-story garage; $45,000.

**Oklahoma City, Okla.;** Stapleton Motor Sales Co.; three-story garage; $40,000.

**Tulsa, Okla.;** J. A. Chapman; one-story garage at 1606 S. Carson avenue; $4000.

**Wasco, Ore.;** Ira M. Bar[illegible]; one-story garage, 100x100.

**Lancaster, Pa.;** Mrs. Caroline M. Steinman, 301 E. Orange street; two-story public garage, 60x80; $16,000.

**New Castle, Pa.;** Lawrence Auto Sales Co.; one-story garage, 66x160.

**Pittsburgh, Pa.;** H. Sampson, 433 Sixth avenue; four-story garage, 91x260; $100,000.

**Philadelphia, Pa.;** Frederick Webber, 1419 Chestnut street; two-story auto show room, 39x118 and 12x14.

**Charleston, S. C.;** Gas Engine and Electric Co., 174 King street; two-story brick, wood and cement garage, 60x125

**Sioux Falls, S. D.;** J. F. Watson, 432 N. Franklin avenue; one-story garage, 44x125; $4500.

**Bay City, Tex.;** Bay City Auto and Sales Co.; one-story Ford service station, 100x120.

**Dallas, Tex.;** J. C. and G. A. Robertson; two-story automobile building, 132x130; offices finished with tile floor and gray enamel trimmings; connected with pneumatic system and intercommunicating telephones; second floor for shop, 60x130; parts department, 60x60; storage space, shower baths, hot water heat. Lessee Overland Automobile Co.

**Wharton, Tex.;** R. E. Vineyard; one-story garage; $12,000.

**Lynchburg, Va.;** Woodstock Corporation, 1315 Church street; one and two-story garage and service station, containing 21 stalls; $7500.

**Wheeling, W. Va.;** F. M. Sheets, 16th and Chapline streets; one-story commercial garage, 70x70; $2800.

**Blaine, Wash.;** Smiley & Chamberlain; one-story garage, 60x112; $10,000.

**Castle Rock, Wash.;** H. D. Drew; one-story garage, 50x107.

**Spokane, Wash.;** W. W. Trumbull; one-story garage, 52x120.

**Antigo, Wis.;** Othersall & Sorenson; one-story garage, 80x82; $15,000.

**Belleville, Wis.;** Belleville Auto Co.; one-story garage, 50x100.

**Hillsboro, Wis.;** M. O. Lind; one-story garage, 45x120; $10,000.

**Milwaukee, Wis.;** American Automobile Co.; one-story garage and service station, 75x120.

**Milwaukee, Wis.;** Dickson Motor Car Co.; one-story garage, 75x150.

**Milwaukee, Wis.;** Leiser & Holst, Germania building; one-story garage, 48x65.

**Milwaukee, Wis.;** Stanley Kadow, 451 Mitchell street; one-story service station, 16x24.

**Neillsville, Wis.;** Knorr & Rausch; one-story garage, 50x100.

**Racine, Wis.;** Chester Dahl; one-story garage, 80x120; $8000.

**Shullberg, Wis.;** J. B. Hebenstreit; one-story garage, 70x85; $12,000.

**Watertown, Wis.;** A. Kramp Co.; one-story garage, 35x85.

**Augusta, Ga.;** Lawrence Construction Co.; one-story brick and concrete garage, 68x150; tin roof, concrete floors; for C. J. Sweeney; $4500.

**Chicago, Ill.;** B. W. Construction Co.; 10 S. La Salle street; one-story garage, 75x50; for People's Pure Ice Co., 1225 Cortland street; $10,000.

**Chicago, Ill.;** Baers Express Co., 1929 Milwaukee avenue; one-story garage, 48x96; $4000.

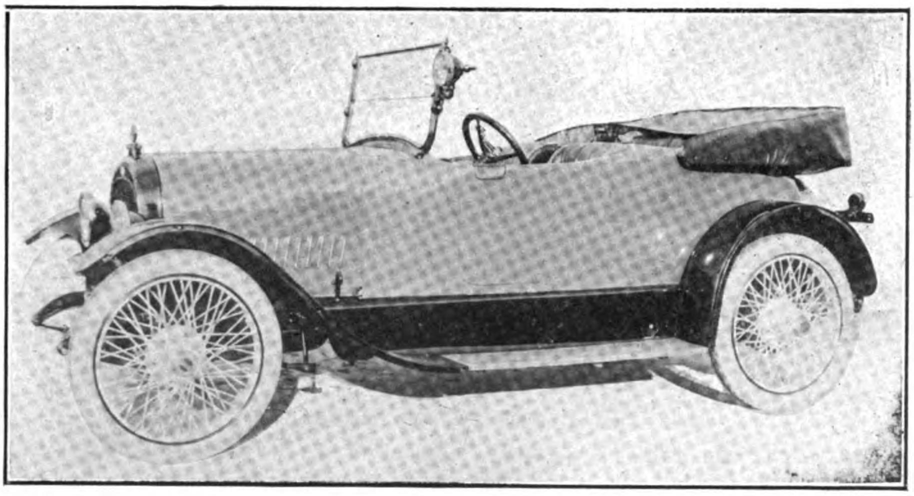
**Oelwein, Ia.;** G. Trebis; one-story garage, 50x100; for W. Jamison; $9000.

**Manhattan, Kan.;** M. J. Green, Union National Bank building; one-story garage, 50x150; for D. F. Bergier, 100 Bluemont avenue; $9000.

**Manhattan, Kan.;** S. Johnson, 621 N. 6th street; one-story oil filling station, 19x24; for Long Oil Co.; $2500.

**Vinton, La.;** P. Oliver & Son, Lake Charles, La.; one-story brick garage, 60x100; for A. Perry and J. L. Perry.

**Detroit, Mich.;** E. L. Agee, 294 Merrick avenue; one-story public garage, 70x90; for William H. Martin, 1805 Woodward avenue; $5000.



**Kline Kar, Four-Passenger Shamrock Roadster. Price, Equipped with Wood Wheels, $1495; with Wire Wheels, $1595.**

# NEW BUSINESS CONCERNS AND CHANGES OF NAMES.

## Recent Transfers of Business Ownerships.

**Martinez, Cal.;** The Central Garage has been purchased by R. W. Bender.

**San Jose, Cal.;** S. J. Wahl & Son have sold their automobile garage to Valentine Eigenbrod, Jr.

**Englewood, Col.;** Englewood Garage has been bought by O. I. Cole.

**Lamar, Col.;** The Miller Brothers & Co. garage has been purchased by Mace Brothers.

**Longview, Ill.;** John J. Clements has purchased the garage of C. A. Hand.

**Mapleton, Ill.;** John Lutzen has purchased the Mapleton Garage and has taken possession.

**Harris, Ia.;** J. W. Mith has sold his garage.

**New Hampton, Ia.;** Frank Fleming has purchased the garage of Avald Reich.

**Newton, Ia.;** Smith Motor Co. has purchased the Colfax Auto Co. and will operate it as a branch.

**Ruthven, Ia.;** The DeMill Auto Co. has been purchased by W. R. Harris.

**Sheldon, Ia.;** The Trimp Garage has been purchased by William Timmerman.

**Arkansas City, Kan.;** Carl Marshall has sold his interest in the Union Motor Co. to Ralph Love.

**Colony, Kan.;** Wilmoth & Christian have bought the garage of C. H. Ferguson.

**Garnett, Kan.;** B. C. Johnson and Elmer Cornult have built the K-T Service Station.

**Kingman, Kan.;** J. D. Jones has bought the Walter Auto Co.'s Garage.

**Lucas, Kan.;** Roy C. Fowler has bought the garage of Thorp & Campbell.

**Ellsworth, Kan.;** A. G. Vleek has bought the garage of Wm. Bender.

**Olathe, Kan.;** The City Garage has been purchased by Dent & McCaughey.

**Osborne, Kan.;** Quincy Smith has bought the Stone Garage.

**Pittsburgh, Kan.;** McKay & Smith have sold their garage to Benoist & Penimory.

**Safford, Kan.;** W. Johnson has bought the L. Jolly's Garage.

**Stockton, Kan.;** Roy Knight has bought the Stone Garage from G. A. Probasco.

**Winona, Kan.;** The U. P. Garage has been purchased by J. N. Thouvenell.

**Cadillac, Mich.;** The Enterprise Machine Co. has been purchased by the McDonald Auto Sales.

**Ypsilanti, Mich.;** Louis B. Osbon is now the sole owner of the Ypsilanti Vulcanizing Co. H. Heath is the retiring partner.

**Nassau, Minn.;** Oscar and Elmer Hillstad has bought the Otto Froemming Garage.

**Verndale, Minn.;** The John Weber Garage has been bought by H. P. Boyer.

**Westbook, Minn.;** Herman Boeck has bought the Grant Ross Garage.

**Braymer, Mo.;** Mark E. Feltis has bought the garage of M. J. Shirley.

**Craig, Mo.;** J. E. Thompson has sold his garage to Sam T. Thompson.

**Fulton, Mo.;** The Renner Brothers Garage has been taken over by the Jameson Service Station.

**Graham, Mo.;** Samuel Bysart has bought the garage of W. C. Wilson.

**Lexington, Mo.;** William Palmer, Jr., has sold his garage and repair business to Claude Sunner.

**Maysville, Mo.;** Ulys Stark has bought the garage of George Fouts.

**Paris, Mo.;** L. E. Finnell has bought the garage of C. D. Peck.

**Sedalia, Mo.;** The J. F. Smith Garage has been bought by Hiram Swope.

**Conner, Mont.;** Bret Read has leased the Conner Garage.

**Musselshell, Mont.;** G. E. Miller and Wright Harvey have bought the H. E. Martin Garage.

**Auburn, Neb.;** C. B. Mitchell and Joseph Barada have bought the Dustin Garage.

**Fairbury, Neb.;** Dwight Young has sold his garage to Sol Cressman.

**Fremont, Neb.;** H. W. Buller has bought the repair shop of E. L Whitcomb.

**Guide Rock, Neb.;** G. L. Columbia has bought the repair shop of Konzack Brothers.

**Hartington, Neb.;** R. T. Duman has bought the Elite Garage.

**St. Paul, Neb.;** Alvin Haggstrom has bought the Corner Garage.

**Sunol, Neb.;** M. Hutchins has sold his garage.

**Thedford, Neb.;** B. L. Mills has bought the garage of S. C. Hyndshaw.

**Rochester, N. Y.;** J. Frank Morris has sold to F. W. Sage the new brick garage on the west side of Scio street, now occupied by the Willard Storage Battery Co.

**Newark, N. J.;** P. J. Durham Co., 235 Central avenue, has been appointed service station for U. S. L. batteries by the H. B. Shontz Co., New York, which acts as central service station and distributor for the U. S. L. Heat Corporation.

**Fairmount, N. D.;** Fairmount Motor Co. has leased the Fairmount Garage.

**Fairview, Okla.;** Homer Compton has sold his Orient Garage to Emil Butler.

**Hockerville, Okla.;** The Malone Garage has been purchased by P. O. Baxter.

**Little Rock, Okla.;** R. A. Cook has bought the interests of W. J. Johnson in the Cook-Johnson Auto Co. The firm will be known as the Cook Automobile Co.

**Waurika, Okla.;** O. O. Teeter has bought an interest in the Mize Motor Co. The firm will be known as the Mize-Teetor Motor Co

## Factories, Garages and Repair Shops.

**Sheffield, Ala.;** The Sheffield Garage Co. will erect a large garage building at the corner of Fifth street and Nashville avenue.

**Sherrill, Ark.;** W. H. Whitfield has opened a garage on Center street.

**Niles, Cal.;** Rose's Garage has installed a vulcanizing plant.

**Santa Rosa, Cal.;** J. G. Barrett and H. H. Cook have opened the Rose City Auto Repair Shop at 9 Main street and will specialize on light cars.

**Americus, Ga.;** Claude Mauk & Co. have opened a repair shop on Jefferson street.

**Fort Lauderdale, Ga.;** The Broward Sales Co. has established a garage.

**Gainesville, Ga.;** Deal Garage Co. has installed a vulcanizing plant and filling station.

**Macon, Ga.;** Griswell's Garage has added a vulcanizing plant.

**Des Moines, Ia.;** The Consigny Motor Co. will erect a $25,000 garage at 1314-18 Walnut street. It will be one story, 100 by 120 feet, and fireproof throughout.

**Grand Junction, Ia.;** J. W. Bradford is preparing plans for a garage to be erected for J. Fred Melton. It will be one-story and basement, 66x132 feet of block and stone. It will cost $15,000.

**Humeston, Ia.;** The Foster Motor Co. has opened a new garage in the Bijour Ring building. The concern will do all kinds of repair work and carry a complete line of accessories.

**Lemars, Ia.;** The Iowa Motor Sales Co. has opened a garage.

**Southbridge, Mass.;** Joseph L. Berchiaume will build a garage in the rear of 33 Pleasant street.

**Watertown, Mass.;** M. Karajian will erect a one-story garage at Mt. Auburn and Prentiss streets.

**St. Louis, Mo.;** Yale Garage and Motor Car Co. will erect a two-story garage building at the northeast corner of Eighth street and Lucas avenue. The building and its equipment will involve a total expenditure of $50,000.

**Papillion, Neb.;** Theodore Burdoff has opened a repair shop.

**Jersey City, N. J.;** The Casino Realty Co. will erect a large garage at 784 Montgomery street. It will be 72 by 150 by 57 feet and will accommodate 50 cars.

**Cincinnati, O.;** Frederick A. Schmidt Co. will build a two-story public garage at 1046-1048 Gilbert avenue. It will cost $35,000.

**Claremore, Okla.;** Fred Aterberry and S. J. Turk has opened a repair shop under the style of Motor Supply Co.

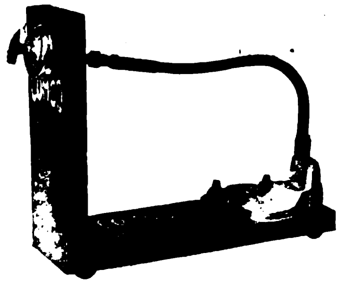
ACCESSORIES
AND
EQUIPMENT

### COMCO AUTO LOCK.

A lock that is said to be 100 per cent. thief proof is now being sold under the trade name of Comco Auto Lock. This device is very simple and is scientifically constructed.

It consists of a gasket like attachment, which is fastened between the carburetor and intake manifold or engine. This gasket is cast integral with the lock mechanism housing and is fitted with a shutter which cuts off all the gas supply to the engine when the device is locked. From the lock mechanism a flexible connection leads to a combination dial on the dashboard which may be set to a great number of combinations.

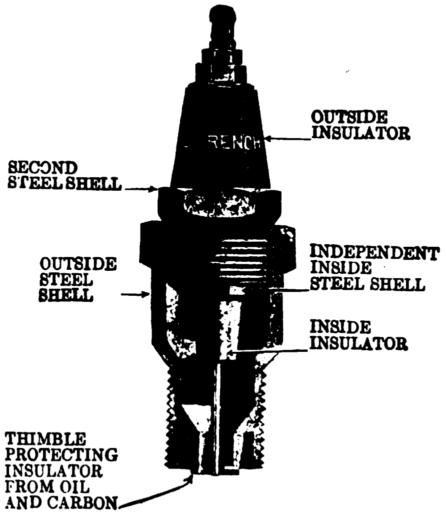
To lock the device a turn of the combination knob is all that is necessary. No gas can then reach the engine from the carburetor. The manufacturers claim that the device cannot be picked or broken without damaging the engine fittings, and is so simple that it may be operated in the dark by a person familiar with the correct combination. The illustration shows the dealer's display stand, which is furnished to any one ordering 12 or more locks.


Comco Auto Lock.

**Manufactured by Combination Auto Lock Co., 1134 Chestnut St., St Louis, Mo. Standard lock for any car, $10. Ford special, $7.50. Special proposition to dealers.**

### LAFRENCH SPARK PLUG.

The LaFrench Power Spark Plug, which has just been placed on the market, is one of unusual design, which is built up with telescopic tapered fittings assembled from the bottom up by hydraulic pressure, a feature which is said to make the plug absolutely compression tight.


OUTSIDE INSULATOR
SECOND STEEL SHELL
FRENCH
OUTSIDE STEEL SHELL
INDEPENDENT INSIDE STEEL SHELL
INSIDE INSULATOR
THIMBLE PROTECTING INSULATOR FROM OIL AND CARBON
La French Spark Plug.

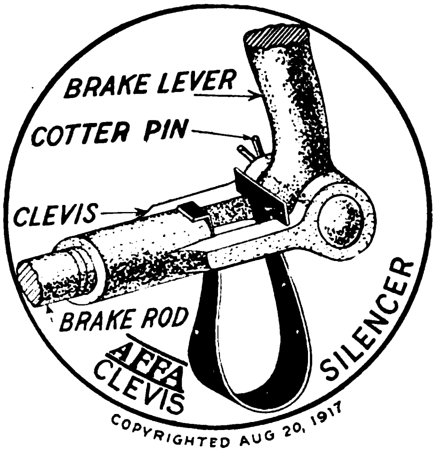
The insulator is a mica composition, said to be unaffected by heat, moisture or oil, and enclosed in an independent inside steel shell. At the bottom of the plug there is a unique thimble arrangement which is devised to reduce to a minimum the accumulation of carbon within the plug.

The complete plug is of two independent parts, which can be taken down and cleaned in the most simple manner.

**Manufactured by the La French Power Spark Plug Co., E. First Ave., Columbus, O. Write for prices and further details.**

### AFFA CLEVIS SILENCER.

Loose brake rods, etc., are responsible for many of the small rattles, squeaks and other noises that an automobile is heir to and cause a driver much annoyance. Besides this there is always the attendant danger of car damage due to neglect of other and more serious noises which are drowned out by a multitude of such small rattles.

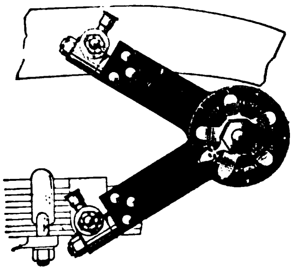


The Affa Clevis Silencer, designed for the Ford car, but fitting clevises of many other cars, effectually silences the rattles arising from this source. This device is simple, as shown in the illustration, and easily applied.

**Manufactured by Affa Specialty Co., 34 Southbridge St., Worcester, Mass.**

### HARTFORD SHOCK ABSORBER.

Announcement is made to motorists and the trade of a new swivel type of shock absorber, made by manufacturers of the well known Hartford Shock Absorber. This device, while retaining the well known basic characteristics of previous models, shows a refinement of detail and the addition of an ingenious form of swivel, end joint construction.

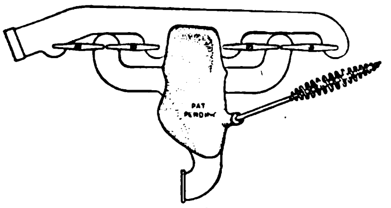

Hartford Shock Absorber.

The centre part, as usual, carries the friction discs of treated wood, held by loose pins, and encircles by a cover and adjusting device for increasing the friction as desired. The ends of the arms are each fitted with a steel stud, which is firmly riveted to the arm and over which is driven a split, steel spring bushing, oval in shape, which bears against the stud on two lines of its short axis.

Over the stud and steel bushing a drop forged hardened knuckle is forced, the smaller of the two holes in the knuckle is slightly smaller than the oval bushing at its largest diameter. This construction compresses the bushing, taking up the lost motion and compensates for wear.

The knuckle is held in position on the stud by a tightening nut, under which is a cupped spring washer that makes a tight, but movable connection. A hole at right angles to the stud hole fits over the chassis bolt, which is bushed and fitted in the same manner as the arm stud. A grease cup is fitted to each knuckle.

**Manufactured by Edward V. Hartford, Inc., 147 Morgan St., Jersey City, N. J. Write for prices, stating name and model of car.**


HOT-O-SPOT STARTER CO COL.O.

## HOT-O-SPOT STARTER.

Hot-O-Spot Starter is an ingenious application of the hot-spot principle of vaporization. This device is an iron casting which is designed to fit over and conform with the shape of the intake manifold. It is fitted with a heat insulating wire handle.

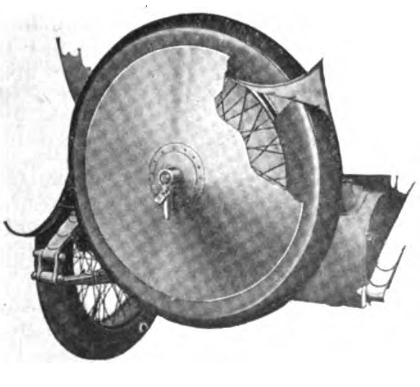
To start a cold Ford engine the Hot-O-Spot is heated in an oven or over a fire and then hung on the intake manifold. After a few minutes the manifold heats and the engine starts very readily. The device may be left in place while the car is being run and conveys heat from the exhaust to the intake manifold.

**Manufactured by the Hot-O-Spot Starter Co., Columbus, O. Price, $2.50.**

## DRAVER TIRE CARRIER.

Tire stealing has become as much of a profession with a certain class of people as the stealing of cars. There is always a great element of chance taken by an automobile thief, while a tire can usually be disposed of with but little trouble and practically no chance of detection.

The Draver Wheel and Tire Carrier consists of two discs, which are mounted on a centre spindle and clamped together with the wheel or tire between them, making a water tight combination in which may be carried spare tubes, etc. The whole device is fitted with a special locking device. The illustration shows how a spare wheel and tire, covered with a leather cover, may be carried on the back of the car. A portion of the outer disc is cut away to show the construction. The device is so arranged that it may be extended to take care of two wheels or tires at a time.

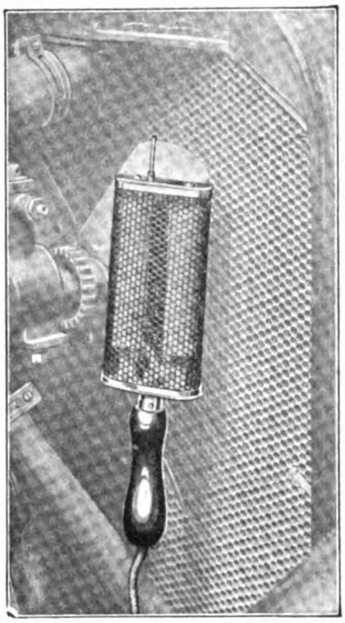

Draver Tire Carrier.

**Manufactured by E. R. Draver Manufacturing Co., Richmond, Ind. Write for prices, giving size of wheels or rims.**

## PRESTO ENGINE HEATER.

Where an automobile is kept in an unheated garage the owner frequently experiences much trouble in starting the engine on a cold morning, due to the poor vaporization of the fuel. There is a consequent drain on the storage battery that soon damages that unit, or reduces its efficiency.

The Presto Engine Heater is designed to prevent engine trouble arising from low temperatures in unheated garages and may be used where lighting current is available. It consists of two electrical heating coils mounted in a perforated metal case, which is fitted on end with a swivel base hook and on the other with an insulated handle. This device is first connected, through the 10-foot length of flexible cord, with the lighting circuit, then placed beneath the hood of the automobile and the current turned on. But a few minutes are required to warm the carburetor to an operating temperature, and the strain on the storage battery is reduced.

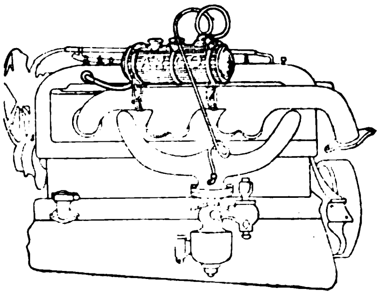

Presto Engine Heater.

It is claimed that the device uses but little current and may be left under the hood all night, in operation, ready for an early start in the morning.

**Manufactured by Metal Specialties Manufacturing Co., 338 N. Kedzie Ave., Chicago, Ill. Write for prices.**

## ARCO CARBON ELIMINATOR.

Extensive experiments would seem to indicate that the introduction of water vapor in an internal combustion engine tends to reduce carbon, and, in many cases, aid combustion. The Arco Carbon Eliminator is designed on this principle and consists of a tank, mounted on the exhaust manifold, and lengths of suitable tubing. The tank is fitted with an automatic float mechanism and a strainer and is connected with the cylinder water jacket at any convenient point.

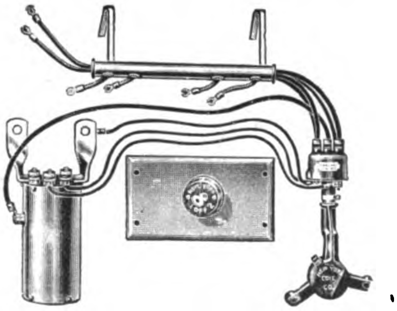

Arco Carbon Eliminator.

Leading from the top of the tank is a tube which carries the vaporized water to the intake manifold. In operation water runs through the strainer, where all impurities are taken from it, then into the tank. As the water level in the tank rises the float mechanism closes the valve, thus keeping the water at a predetermined level. The heat from the exhaust manifold or pipe vaporizes the water and this water vapor passes into the engine through the manifold.

**Manufactured by the Automatic Carbon Eliminator Co., 2010 Broadway, New York. Price, $17, including installation.**

## VIBRATOR-LES COIL.

Something distinctively new in an ignition system for Ford cars is illustrated herewith, called the Vibrator-les Coil Ignition System. As every Ford owner knows, standard equipment furnished consists of four vibrator coils for ignition and a timer, and unless all of the coils are in perfect syncronism there is a certain loss of power in the engine.


Vibrator-Les Coil.

The Vibrator-les system consists of a timer distributor unit, which is designed for mounting on the front of the engine, and driven from the present camshaft projection. The distributor unit is similar to the conventional high-tension distributor, while the timer, or breaker box is so arranged that with every break in the circuit a shower of sparks passes through the coil, which is mounted on the engine.

Current for the system is taken from the Ford magneto, and such is the construction of the breaker box that the "dead" points of generation in the magneto do not affect its working.

This system is said to work equally well either on dry cells or storage battery, and is furnished with a two-way switch, which may be mounted on the dash in place of the regular Ford coil box.

**Manufactured by New York Coil Co., 338 Pearl St., New York, N. Y. Price complete, $20.**

## SPOK TITE.

One of the elements of danger, always present where a car is kept in a heated or dry garage arises from the contraction of the wood spokes and wheel rims. With the construction comes the loosening up of the whole wheel and sooner or later the wheel is very apt to collapse and cause much damage, possibly the loss of life.

Spok Tite is a liquid preparation which is said to be uninjurious to painted or varnished surfaces and when applied causes the wood to swell and resume its normal proportions. The can is furnished with a handy spout and upon signs of looseness in the wheels a few drops of Spok Tite are squirted into the crevices formed by the drying up of the wood. The wheels may be left in place for the treatment and the action of the liquid is rapid.

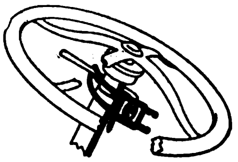
**Distributed by Charlie Foster, 243 Columbus Ave., Boston, Mass. Write for prices.**

## THE STEWART HANDY WORKER.

A handy device which should be of great value in any repair shop or private garage is known as the Stewart Handy Worker. Complete, the device weighs 90 pounds and is, primarily, a vise. Such is the construction, however, that many tools are combined with it.

As a vise the jaws open to 4½ inches and being faced with steel, are practically indestructible. The jaw opening mechanism is operated by a hand wheel and screw, the sliding jaw being supported upon two heavy round pieces of cold rolled steel.

The sliding jaw is fitted with a three-gear reduction spindle, with provision for handle upon each gear. The upper spindle extends through the jaw and is fitted with device for holding square shank drills, thus forming a drill press. With the device is furnished an adjustable arbor upon which may be mounted an emery buffing wheel, or scratch brush.



Elgin's Ford Lock.

The rear jaw, which comprises also an anvil, is removable and fitted with metal cutting tool. With the jaw removed and an L fitting substituted, a drill press is formed.

An extra pair of toothed pipe jaws fit between the vise members, forming a substantial pipe holding device. Complete with all fittings the machine may be said to have an unlimited range of work, and as it is substantially constructed, will withstand considerable hard usage.

**Manufactured by Chicago Flexible Shaft Co., 12th St. and Central Ave., Chicago, Ill. Price, $14.**

## ELGIN'S FORD AUTO LOCK.

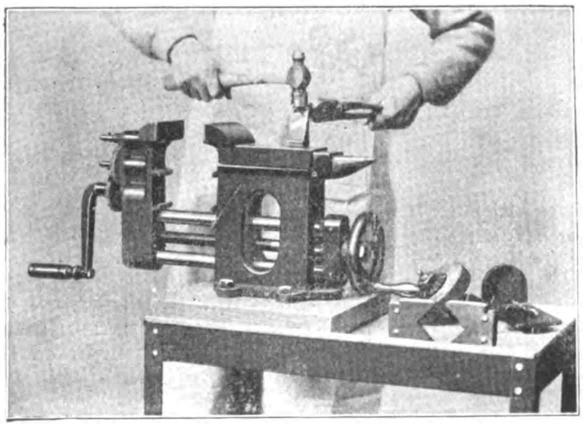
The Elgin's lock for Ford cars is an ingenious and simple little device for foiling the would-be thief. It consists of a specially designed lock having a U shaped locking device, similar to a hand cuff. With it the throttle lever and spark advance arm are fastened to the extreme retard position.

With the lock are furnished two keys and it is claimed that there are no two sets of keys alike.

**Manufactured by Elgin Motor Power Manufacturing Co., Cedar Rapids, Ia. Price $2. Special proposition to dealers.**

## WESTINGHOUSE CIRCULARS.

The Westinghouse Electric and Manufacturing Co. of East Pittsburgh, Pa., have just published two new pamphlets which should be of interest to the trade. The first deals with Bakerlite Micarta-D Gears and Pinions, and contains much technical information relative to this product and their installation. The distinctive features of Bakerlite material for noiseless gears and pinions, its physical properties, methods of turning, drilling and cutting and horsepower transmission are fully taken up in the book which should form a valuable addition to the library of any one interested in gear installation.



Stewart Handy Worker in Use.

SPOK TITE
TIGHTENS LOOSE WHEELS
THE WOODTITE LABORATORIES

Spok Tite.

The second booklet is descriptive of starting motors, lighting generators and ignition units for automobiles, trucks, tractors, etc., and gives a general description of the Westinghouse starting motor for engines of piston displacement from 200 to 1000 cubic inches and of generators of capacities from 15 to 25 amperes at 6.5 to 13 volts.

Among the latter are included the new cam regulated generators which are being used on military and commercial trucks and farm tractors. Generators of this type are said to furnish constant voltage over a wide range of speed, even though the battery is disconnected from the circuit.

The book is profusely illustrated with views of the apparatus and its various parts and tables giving the necessary data for application are included.

**Either or both of the above pamphlets may be obtained from the manufacturers or at any Westinghouse office.**

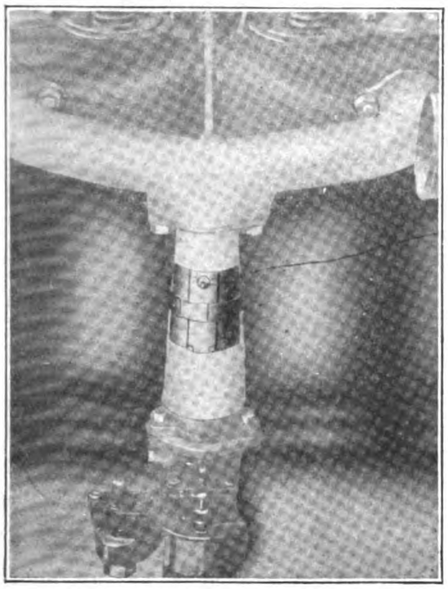
## CORK INSERT BRAKE LINING.

The cork insert principle, which has proved so successful in transmission linings and fan belts for Ford cars, has now been tested and been applied to brake linings for big cars.

This product is made of the highest grade fabric, into which discs of cork are inserted. Cork forms an excellent friction material for this work, giving a smooth braking action, and is interesting because of its high resistance to oil and water penetration. Another point in its favor is that it does not swell under the action of elements and thereby make braking action uncertain.

That cork insert brake lining is suitable for brakes of large cars is evidenced by the fact that a Chicago taxicab company has been testing the product on heavy cars for over six months and they claim that as a brake lining the cork insert is one of the best.

**Manufactured by the Advance Automobile Accessories Corporation, Dept. J3-1, 56 E. Randolph St., Chicago, Ill. Write for prices.**



### ELECTRIC INTAKE HEATER.

Starting the engine is perhaps the biggest problem which troubles the motorist today. Even though the carburetor may function properly the gasoline vapor is condensed on a cold intake manifold so that but little or no fuel reaches the engine, until the crankshaft has been rotated a great number of times.

Now that many cars are fitted with storage batteries the current from this source may be used for heating high resistance coils of wire, which in turn heats the ingoing gas, and furnishes vapor to the engine.

Such a device is the Electric Intake Heater. It is designed to be clamped around the manifold at any convenient point and carries a coil of high resistance wire. A binding post on the device is connected through a dash switch with the storage battery or a set of dry cells. The other pole of the battery should be grounded.

When the heating switch is turned on current flows from the battery through the heating coil and heats a spot on the manifold. As the gasoline is drawn into the manifold it is immediately vaporized by the hot spot and the starting of the engine is said to be a simple matter.

**Manufactured by Electric Intake Heater Co., Jackson, Mich. Price upon request.**

### NICRO SPELTER AND FLUX.

Much of the cost of repairing a broken water jacket is due to the fact that the machine must be dismantled, the part preheated and then welded. The actual welding operation is simple and effective. Something new in a brazing compound has just been put on the market, with which a broken casting, iron, bronze or brass may be repaired with but 300 degrees of heat; a temperature that can be had with an ordinary plumber's torch.

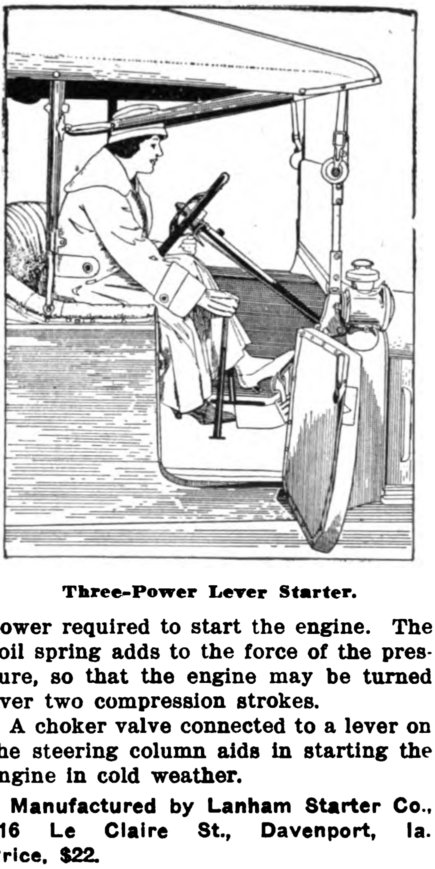
This new product is known as Nicro Spelter and is combined with a suitable flux, which enables the repair man to melt it into the broken jacket, etc., and so make a permanent repair.

The spelter is silvery white when applied, but presents the appearance of bronze when filed, and is said to have an adhesive quality when used with the Nicro liquid, that will cause a repaired jacket to be as good as new.

**Manufactured by Peters Engineering Co., 3202 Chestnut St., Philadelphia, Pa. Write for price.**

### THREE-POWER LEVER STARTER.

Starting the engine from the seat is one of the conveniences of the modern automobile. The Three-Power Lever Starter is a device for application to the Ford car, with which the engine may be started without leaving the car or using the hand crank. This device is connected with a foot pedal, a hand lever and a coiled spring. When one pulls the hand lever, pressure is naturally applied to the foot lever, thus distributing the power required to start the engine. The coil spring adds to the force of the pressure, so that the engine may be turned over two compression strokes.



Three-Power Lever Starter.

A choker valve connected to a lever on the steering column aids in starting the engine in cold weather.

**Manufactured by Lanham Starter Co., 316 Le Claire St., Davenport, Ia. Price, $22.**

### COMMON SENSE SHOCK ABSORBER.

The Common Sense Shock Absorber is a new device which is especially designed to absorb and prevent the recoil of automobile springs. The shock absorber proper is securely bolted to the frame member and consists of a triangular wedging block and pin device, which is adjustable. Between the pin and the block a heavy strap passes, one end of which is passed around the axle, while the other is connected with a heavy coiled spring.

When the car passes over an obstruction in the road and the axle and chassis come together, the coil spring contracts and takes up the slack in the strap. The wedge and pin device permits the passing or slipping of the strap upward, but offers considerable resistance to its downward travel. The recoil is thus absorbed, both by the spring and by the wedging device, and it is said that the recoil is smooth and easy.

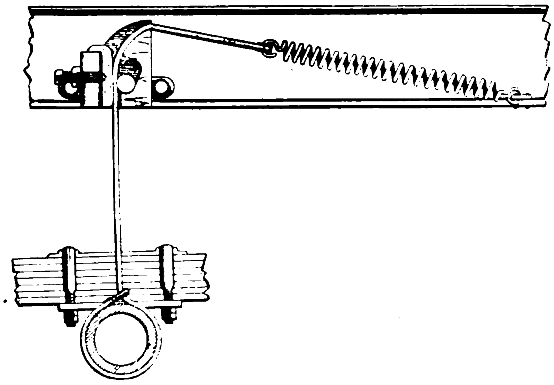
**Manufactured by Common-Sense Manufacturing Co., Runyan St. and Sherman Ave., Newark, N. J. Write for prices.**

### THORWALD'S ELECTRIC HEATER.

The proper application of heat to the carburetor or intake manifold is said to be the easiest solution of the "hard starting" engine problem, which will probably be greater this winter than ever before because of the lower grade of fuel. The Thorwald's Electric Carburetor Heater is designed to vaporize the gasoline in the carburetor, even on the coldest day, and furnish an explosive mixture under any conditions. The manufacturers say that but little battery current is required to heat the gasoline in the carburetor to the boiling point, after which the motor may be started very easily.

The device is connected in circuit with a switch and the storage battery and with the switch thrown in furnishes the necessary heat for vaporizing the gasoline. It is claimed that by the use of this device much of the strain of difficult starting and continued use of the starting motor is removed.

**Manufactured by E. H. Sprague Mfg. Co., 606 S. 14th St., Omaha, Neb. Write for prices, giving name of car and equipment.**



Common Sense Shock Absorber.

GROUND
STORAGE BATTERY
SWITCH ON DASH

THORWALD'S ELECTRIC
Carburetor Heater

# PRACTICAL SUGGESTIONS

### GASOLINE TANK FITTING.

(Figure 47.)

Do you feel sure of the gasoline supply from the tank to the carburetor on your car? If it is gravity feed, then sooner or later the supply may fail, either because of an especially steep grade, or because of the clogging of the supply pipe. The accompanying illustration shows an easily constructed device which should be in the tool kit of every motorist. Obtain an extra gasoline tank filler cap and through the centre, bore a hole large enough to allow the insertion of an ordinary valve stem. Put the stem into position as shown, clamping a rubber washer on each side of the cap, so as to make the fitting air tight. When the gasoline supply is cut off for any reason, screw the cap into place and pump in a supply of air with the tire pump. The pressure will dislodge particles of waste or dirt which may be lodged in the fuel line.

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### TEMPORARY PACKING.

(Figure 45.)

Though rubber is soon destroyed by the action of gasoline, it is possible to use it for packing unions on gasoline and oil lines in the automobile. Small rubber bands are easily applied and when twisted around the pipe as shown leave no loose ends to get between the threads and cause a leak. This sort of a packing will not last as long as cotton, but if well coated with shellac and tightly clamped by the union will last for some time and replacement may be effected in very short time.

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### VALVE SPRING REPAIR.

(Figure 48.)

An extra valve spring is a mighty handy thing to have on hand at all times, yet few motorists carry one along for the tour. The breaking of the valve spring puts one of the cylinders out of commission for the time being, thereby reducing the engine power to a great extent. A suggestion is given herewith for a temporary repair where a replacement is impossible. Remove the lower half of the broken spring and slip an iron washer over the valve stem, then replace the broken part of the spring. The washer prevents the two parts from slipping together, making a repair which is nearly as efficient as a new spring.

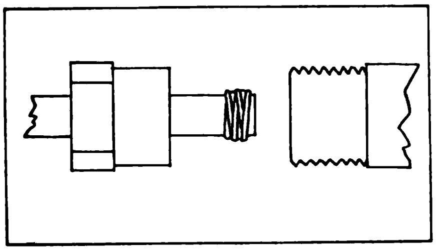

Fig. 45—Temporary Packing.

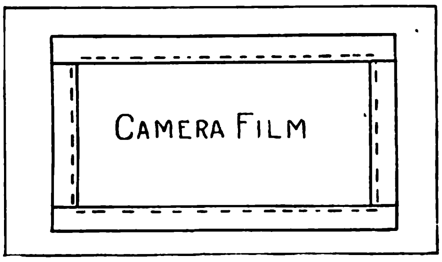

Fig. 46—Curtain Light.

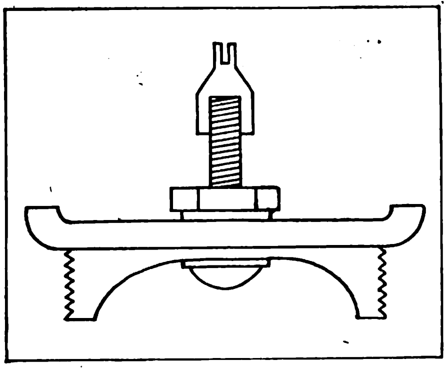

Fig. 47—Gasoline Tank Fitting.

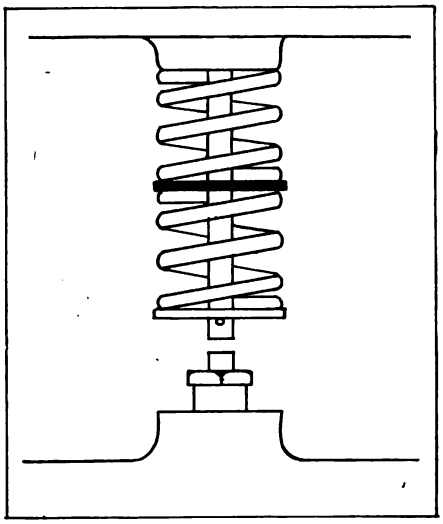

Fig. 48—Valve Spring Repair.

### CURTAIN LIGHTS.

(Figure 46.)

Broken celluloid windows in the storm curtains and the back of an automobile present an unsightly appearance and detract from the beauty of the car. The replacement of the lights is a simple matter, and, if the following directions are carried out, such a replaced light is often better than the original piece of celluloid, for the reason that the material used is nearly glass clear. Obtain an old or used camera film of sufficient size to cover the window opening. Bind it all the way around with dressmaker's tape and sew it to the tape. It is an easy matter to sew the tape binding to the curtains and back of the car, and the result is a clean, white window. The coating may be removed from the film by immersing it in boiling water.

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### REPAIRING BLOWOUTS.

"When a tire is damaged by a blow out extending through all the plies of fabric," says Mr. D. R. Cain, instructor at the Goodyear Tire and Rubber Co.'s school of tire repairing, "the repair must be in the form of a section."

Two methods are commonly used, the outside and the inside, of which the outside is the more efficient. There are three points in a tire where strain and flexing action are most prominent, the centre line of the tread surface and the edges of the tread above the beads. To obtain the necessary strength plies or steps of fabric should not be ended at these points.

First buff the inside of the tire for a distance of five inches on each side of the break. Cut through the tread four inches beyond the injury on one side and skin it back to a point the same distance from the other side. Lay the tread back so that it will not interfere with the work. Remove the side wall on the injury side for the same distance.

Remove one chafing or bead strip below the injury, starting ½ inch inside the limits of the section. A second ply is then removed, starting ¾ inch above the first ply on the reverse side and running one inch inside the first ply on both ends. Then bevel out the remaining plies around the injury, and thoroughly roughen all surfaces to be repaired. The job is now ready for cementing and building.

### HOLDING SMALL DRILLS.
(Figure 52.)

A big problem with the repair man is the keeping of small drills in order. The ordinary circular stack arrangement is not always the most practical method. Then, too, the car owner may not care to keep a full set, at the same time he does not care to throw them indiscriminately into a box and trust to luck to find the right size when he wants it. We illustrate herewith a unique, practical and easily constructed case for holding drills of practically any size. It is easily made from two pieces of soft wood about six inches square or any convenient size. Clamp two such pieces together as shown in the first cut and bore a series of holes, the larger slightly greater in diameter than the biggest drill. The holes need not be drilled through to the opposite end, but stop at different points. When the two pieces are separated a half circular shaped groove will be found in each piece. Nail a thin strip of wood on the open end and you have a serviceable drill holder. By cutting one block slightly shorter than the next they may be stacked one on top of the other in the tool kit.

### REGISTRATION BLANK HOLDER.
(Figure 50.)

An automobile driver who is always thoughtful and tries to obey the law to the spirit as well as to the letter, gives this suggestion for the holding of the registration blank. He says that it eliminates the uncomfortable feeling that the blank has been left in the shop and that it is easily accessible for the traffic officer's inspection. Provide a small picture frame such as is made either for pictures or mirrors and frame the blank. Screw the frame to the seat board beneath the cushion. If the board is removable or on hinges, mount the blank on the underneath side. The law in many states rules that the blank must be with the car. This complies with the law in every respect and should be both a comfort and a time saver.

### GARAGE TURNTABLE.
(Figure 51.)

Though a garage turntable is unquestionably a big asset, not every owner is able to have one. Because of garage construction a fixed turntable is not always practical; in either case the turntable shown in the illustration should be of much use either to the private owner or the public garage man. This device is so constructed as to allow its use in any part of the shop; with it an automobile may be moved in any direction, or turned around with a minimum amount of effort. The construction is simple, it being made of three planks and four or more casters of the roller ball type, which permit movement in any direction. The main ways, or tracks, should be made of 4x8 inch planks, about 11 feet long and spaced with centres 56 inches apart. The cross piece should be about two inches thick and four inches wide, firmly bolted to the rails. Illustration shows view from lower side.

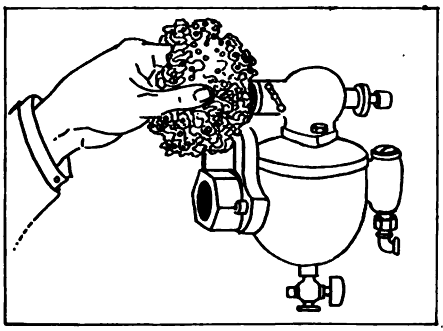


Fig. 49—A Remedy for Difficult Starting.

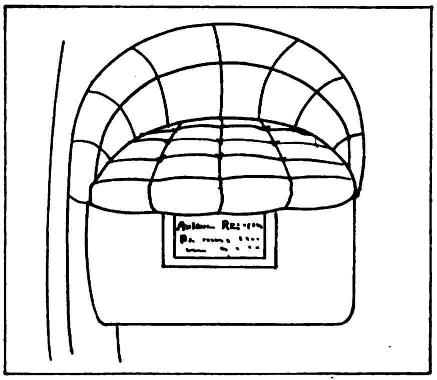


Fig. 50—Registration Blank Holder.

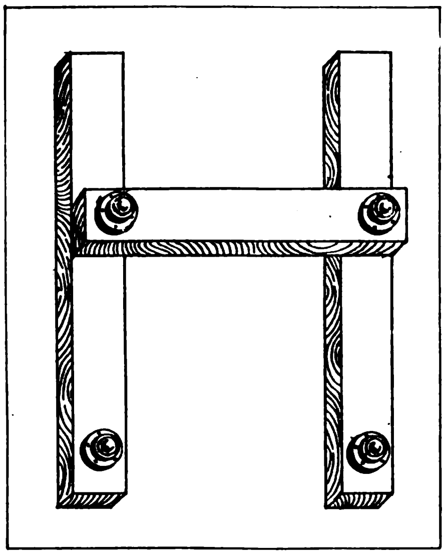


Fig. 51—Garage Turntable.

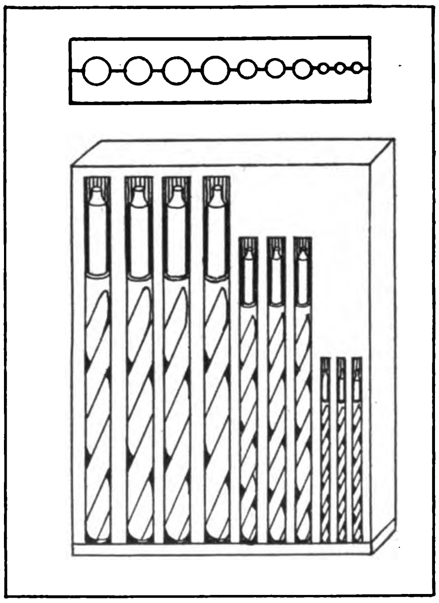


Fig. 52—Small Drill Holder.

### REPLACING NUTS.
(Figure 53.)

Until the "ideal" automobile is designed with every nut and pin on the dashboard, the repair man and motorist will be confronted with the problem of replacing nuts in almost impossible places. Over this small problem much time is wasted and patience worn to a sharp edge. After many vain attempts with a screw driver and a wrench the amateur often gives up in disgust, leaving the nut in the tool kit, and "taking a chance" with the machine. The illustration gives a hint as to a perfectly simple solution to the difficult feat. Bend a thin piece of spring brass or steel into a curve, insert it with the nut in question in the wrench and the nut may then be placed into position and screwed up before the spring is removed.

### DIFFICULT STARTING.
(Figure 49.)

Few motorists are in favor of cranking a car for exercise, neither is this form of exertion to be recommended. In many cases the cause for difficulty in starting a gasoline engine arises from the fact that gasoline does not vaporize and mix with the air in sufficient quantities to make an explosive mixture. The flooding of the carburetor does not always effect a cure, as the air simply passes over the pool of gasoline without carrying any gas along with it. An easy method which seldom fails is to wet a sponge with gasoline and hold it in front of the air intake of the carburetor while the engine is being cranked. The passage of air through the sponge usually collects the liberated gas and an explosive mixture is formed.

### STARTING RUSTY SCREWS.

Because of exposure and weather conditions, wood screws used in the body of an automobile rust into place so that it is a difficult matter to remove them without breaking the heads. When in this condition they often may be removed by the following method: Heat a piece of iron, or soldering copper to nearly red heat and place it against the head of the screw. The heat transferred to the screw expands it, compresses the wood and when cool the screw may be removed easily, as the wood does not contract so quickly as the metal. Before replacing screws it is a good plan to coat them with either oil or soap. They may be turned into place easier and the removal if necessary at any time is facilitated.

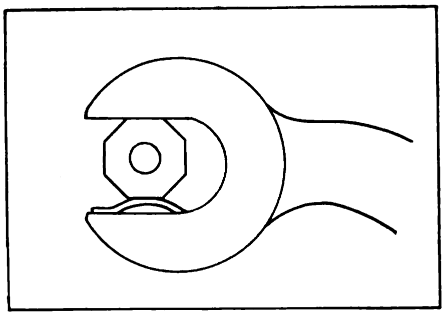


Fig. 53—Replacing a Nut.

# New Trade Plan Proposed To Benefit Dealers

## The Ohio Automobile Trade Association Outlines System For Uniting Public and Dealers Interest

A NEW trade plan to promote the best interests of dealers and better service for the motoring public is announced by the Ohio Automobile Trade Association. Within the past month it has developed this plan of organization and operation to meet the extraordinary demands being placed on the retail automobile trade, and its allied trades, the garage and accessory business.

A. E. Mitzel, Canton, O., President of the Ohio Automobile Trade Association.

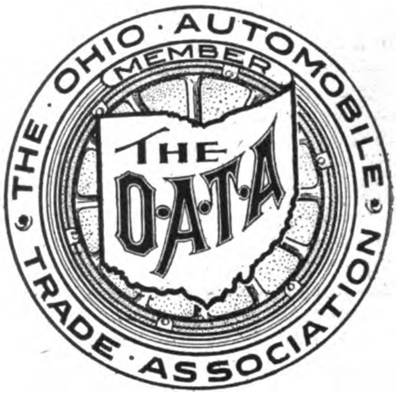
To quote from a pamphlet recently issued from the association headquarters, "the whole purpose of the association is to give a broad and varied service to its members, and to the public." In order to give this service the work of the association has very naturally fallen into two main classes: First, educational work among the members of the association, and, second, educational work among the general public.

The first move upon the part of the association is to organize the entire retail automobile trade of the state (which is defined by the association as including motor car dealers, accessory dealers, garage owners, repair men and tire dealers). On Dec. 1, 1917, the Ohio Automobile Trade Association had something less than 100 members. A general convention was called of all retail automobile tradesmen in Columbus on Dec. 4, 5 and 6, and at this time plans were started for the development of the association along new lines. New officers and directors were elected and a fund of $15,000 was pledged by those interested to carry on the work of the association until such time as it shall become self-sustaining.

Arthur M. Crumrine of Columbus, an advertising and merchandising expert, was employed by the association to draft a plan for the organization of the association along modern business lines. A very complete plan was presented by Mr. Crumrine at a directors' meeting on Dec. 31, and the work of organization under this plan has been started. There have been appointed county directors for each county, and under the county directors, subdirectors for each town.

A thorough canvass of the state by the executive officers of the association has resulted in a complete list of the persons in the state who are qualified for membership. As a result of this intensive work it is expected that the association will have a membership of at least 1000 by April 1.

As soon as the association is placed upon a firm and self-sustaining basis a standards committee will be appointed by the president. This committee will make a thorough investigation into the standards and practises of operation practised in various sections of the state, and will then recommend to the association a code of ethics and standard practises which will be used by all members of the association. Standard cost systems will be adopted, a uniform system of credit ratings established and a uniform scale of trade discounts established and maintained. In other words, this branch of the association activities means the furnishing to all members of the association of such trade information and methods as have heretofore been available only to those retail tradesmen who were members of one of the great sales organizations of the automobile trade.


THE OHIO AUTOMOBILE TRADE ASSOCIATION
MEMBER
THE
O.A.T.A

Sign to Be Placed Over Members' Garage Doors.

It is also proposed by the association that it shall, with the assistance of its merchandising-advertising counsel, educate its members in modern selling methods and modern business practises. This will be done through the maintaining of a bureau which will prepare and distribute to the members suggestions for sales methods, advertising methods, display methods and means of securing publicity, etc. In this way it is thought that the smaller dealers may secure the benefits of the work which is now being done only for those larger organizations in the larger cities. Adequate legal protection for the association is also planned.

When these means for educating and helping the members of the association have been fully worked out and put into effect, it is expected that the association will be composed of members who

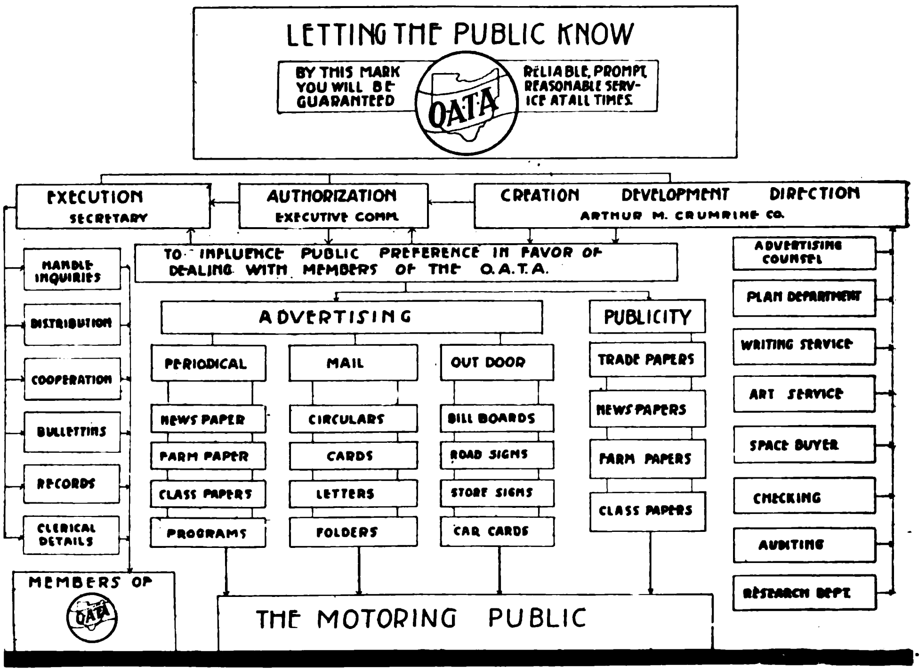

LETTING THE PUBLIC KNOW
BY THIS MARK YOU WILL BE GUARANTEED
OATA
RELIABLE, PROMPT, REASONABLE SERVICE AT ALL TIMES
EXECUTION
SECRETARY
AUTHORIZATION
EXECUTIVE COMM.
CREATION DEVELOPMENT DIRECTION
ARTHUR M. CRUMRINE CO.
TO INFLUENCE PUBLIC PREFERENCE IN FAVOR OF DEALING WITH MEMBERS OF THE O.A.T.A.
HANDLE INQUIRIES
DISTRIBUTION
COOPERATION
BULLETINS
RECORDS
CLERICAL DETAILS
ADVERTISING
PERIODICAL
NEWS PAPER
FARM PAPER
CLASS PAPERS
PROGRAMS
MAIL
CIRCULARS
CARDS
LETTERS
FOLDERS
OUT DOOR
BILL BOARDS
ROAD SIGNS
STORE SIGNS
CAR CARDS
PUBLICITY
TRADE PAPERS
NEWS PAPERS
FARM PAPERS
CLASS PAPERS
ADVERTISING COUNSEL
PLAN DEPARTMENT
WRITING SERVICE
ART SERVICE
SPACE BUYER
CHECKING
AUDITING
RESEARCH DEPT.
MEMBERS OF
OATA
THE MOTORING PUBLIC

Chart Showing How the Public Preference Campaign Will Be Conducted in Ohio Under the Trade Association Plan.

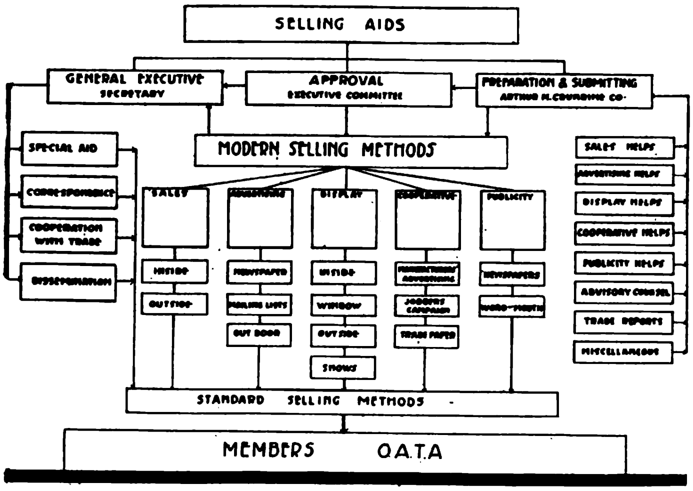

SELLING AIDS
GENERAL EXECUTIVE
SECRETARY
APPROVAL
EXECUTIVE COMMITTEE
PREPARATION & SUBMITTING
MODERN SELLING METHODS
SPECIAL AID
CORRESPONDENCE
COOPERATION WITH TRADE
DISSEMINATION
SALES
ADVERTISING
DISPLAY
COOPERATIVE
PUBLICITY
INSIDE
OUTSIDE
NEWSPAPER
MAILING LISTS
OUT DOOR
INSIDE
WINDOW
OUTSIDE
SHOWS
MANUFACTURERS ADVERTISING
JOBBERS CAMPAIGN
TRADE PAPER
NEWSPAPERS
WORD-OF-MOUTH
SALES HELPS
ADVERTISING HELPS
DISPLAY HELPS
COOPERATIVE HELPS
PUBLICITY HELPS
ADVISORY COUNSEL
TRADE REPORTS
MISCELLANEOUS
STANDARD SELLING METHODS
MEMBERS O.A.T.A

Chart Showing Some of the Proposed Methods for Business Development for the Dealers.

will be rendering only "reliable, prompt and reasonable service to the public at all times," and that the sign of the association upon the door of a retail establishment will be a guarantee to the public that such service will be rendered them.

When this point is reached the association plans a campaign of advertising and publicity reaching all sections of the state, which will bring to the attention of the general public the things which have been done for their protection in the way of higher standards of business, the keeping in stock of none but dependable merchandise, and the general conduct of business upon modern service lines. "What are we driving at," says President A. E. Mitzel of Canton, "is that when a man takes his car into a service station of any kind, and says to the man in charge that 'there is something wrong,' that he will be assured of the same careful, perfect attention that he now secures when he takes his watch to a jeweler's for attention. We want the public to know that by patronizing only members of the association they will be assured of reliable, prompt, reasonable service at all times."

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## BRIDGEPORT AUTO SHOW POSTPONED TO MARCH 25-30.

In order to save light and coal, Manager B. B. Steiber of the Bridgeport Auto Show, Bridgeport, Conn., has postponed the exhibition to March 25-30. Holding the show at a later date will give the dealers the advantage of the improved weather conditions to bring their cars over the road. Elaborate decorations are being prepared, including electrical displays and a big line of passenger cars, trucks, trailers and tractors will be exhibited. The show will be staged in the State Armory and Casino daily and evenings.

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## NORTHWESTERN CHEMICAL GIVES FUND FOR SOLDIERS.

Clark G. Griffith, director general of the Ball and Bat Fund, with headquarters at 309 Union Savings Bank building, Washington, D. C., has written a letter of thanks to the Northwestern Chemical Co., Marietta, O., acknowledging the latter's contribution to the fund. The letter, which was addressed to General Manager F. R. Hall, stated:

"Yours of Nov. 20 enclosing check for $250 as a contribution to the Ball and Bat Fund, received, and the channel it came from, I assure you, was a surprise.

"While we have had quite a few checks amounting to three or four figures, we have none that has given up their Christmas for the benefit of the red-blooded boys who are going to save this great country of ours."

F. A. Seiberling, President Goodyear Tire and Rubber Co., Elected President of Lincoln Highway Association for 1918.

# *Fellows in Service Honored By Friends*

### Chicago Branch Employees Give Dinner for Associates Who Have Gone to War.

An incident of patriotic interest at least to the employees of the Chicago office of the Hyatt Roller Bearing Co., was a dinner recently given in honor of two of their number who had joined the colors. J. E. Martin is with the mobile ordnance corps and is stationed at Clintonville, Wis., and T. A. Russel is at the aviation school at Ithaca, N. Y.

The dinner was more than a formality, for it was a leave taking of friends who had endeared themselves by qualities that were keenly appreciated. C. M. Eason, manager of the tractor bearings division of the Hyatt company, stated that the company had made a genuine war sacrifice in losing two men who had given it splendid service. The occasion, despite its object, was greatly enjoyed. Those attending the dinner, shown in the accompanying illustration, from left to right, were: Standing, H. O. K. Maister, H. W. Parker, P. W. Gosselin, H. M. Carroll, E. P. Stahl, C. E. Stoddard, F. A. Dean, A. P. Mohr and George O. Helmstaedter; sitting, C. W. Young, J. E. Martin, C. M. Eason, T. A. Russel, W. L. Iliff and J. R. Bateman.

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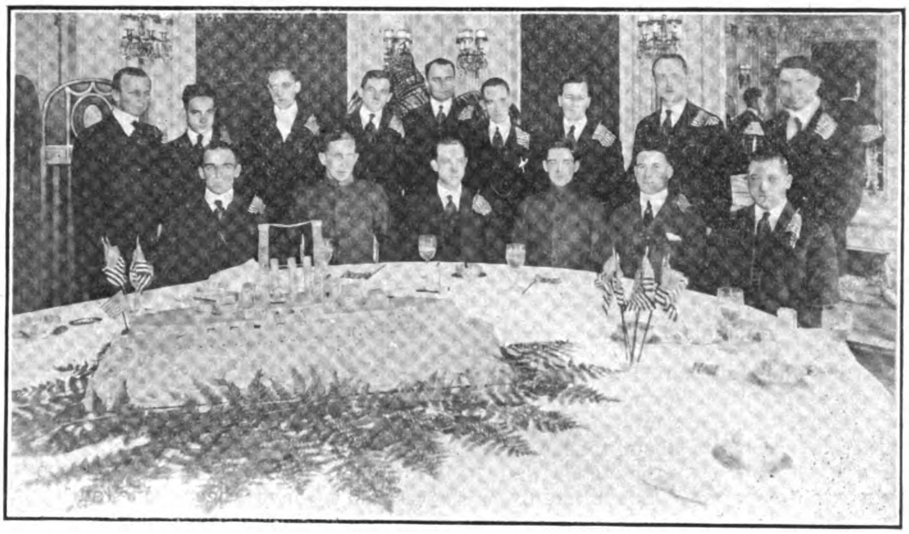
## LOCOMOBILE COMPANY WELL REPRESENTED IN WAR SERVICE.

About 17 per cent. of the force of the Locomobile Co. of America, Bridgeport, Conn., have entered the service of the government. There are at present a total of 336 names on the honor roll, including two who are now majors, three captains, 14 lieutenants and three ensigns. Among the men recently connected with the Locomobile company who have gone into service there is a lieutenant colonel and a major.



Employees of the Hyatt Roller Bearing Co., Chicago Branch, Give Enlistment Dinner to Fellows Joining the Colors.

# One Small Slip-Up That Destroyed a Business

By ELTON J. BUCKLEY.

A RETAIL merchant whom I know is in a bad fix today because he acted as his own lawyer in a matter which seemed so simple that he thought he could attend to it himself. It is a typical case of what may happen to a layman who does his own law business, for it illustrates the fact that the holes in business transactions through which business men lose money are apt to be so deeply hidden to the lay mind that they don't appear to be in the transaction at all.

About five years ago this merchant got a chance to rent a store in a certain neighborhood, which he got a quiet tip was shortly to become greatly improved because of a change in the trolley lines. He took over the store under a five-year lease. He did not deal with the owner direct, but through an agent who had charge of all the owner's property. The owner is the estate of a wealthy deceased woman and has not yet been divided.

The retailer realized that if his information about the new trolley service proved correct his location would soon become most valuable. He, therefore, protected himself, as he thought, by having the agent insert in the lease an option to buy the property at any time within five years for so much money. The price agreed upon was a fair price if no trolley service came, but a low price if it did come.

The lessee moved in and began to establish his business. He worked along with it for about nine months, and got it fairly on its feet. Then the new trolley service came along, bringing several times as many people to the neighborhood, and business immediately took on the appearance of a boom. Within a month the store was doing 25 per cent. more business, and in a year it had doubled. Naturally real estate values went up accordingly.

The merchant decided to buy his property, but thought there was no hurry to exercise his option, because it was good any time within five years. So he waited until his lease was about to expire and then gave notice to the agent that he proposed to exercise his option to buy. Accompanying the notice was a check for the first payment agreed upon.

At this time this was an exceedingly valuable location, business was splendid and constantly increasing.

**ARE you in need of legal advice? Do you want first class professional service at no cost to yourself? If so, address a letter to Mr. Buckley, in care of the Legal Department of the Accessory and Garage Journal, detailing your troubles as clearly as possible. He will give immediate answer, either on this page, for the benefit of other subscribers who may have the same trouble, or direct by mail, as the inquirer specifies. The writer should sign his full name and address, but only initials or a pseudonym will be published in these columns. The service is free to subscribers to this magazine.**

The agent did not reply for a few days, and then he returned the check with a note stating that the owner refused to recognize the option on the ground that he, the agent, had had no authority to make it. A lawyer would at once recognize the importance of this point, but a layman might not, and the lessee, thinking it a mere bluff, did not worry over it. He called on the agent and soon became convinced that he would have to fight for his option. He then consulted a lawyer and was told that the case rested on a question of fact, viz.: Had the owners of the property at the time the lease was signed, given the agent the authority to sell the real estate, make a contract to sell it, or grant an option on it? If they had, the option was good, if not, it was bad.

Let me emphasize here the great importance of the situation to this merchant. The value of the real estate was 33 1/3 per cent. more by reason of the trolley improvement than the price named in his option. But worse than this, the owners refused to sell it at all, believing that in a year or two it would be worth more. The neighborhood had become such a good one for business that there was not a store in it for rent anywhere except one small place that wouldn't have been one-tenth large enough. Also, a large part of his business was transient, and the agent had followed the return of the check with notice to vacate at the end of the term. Not pay more rent, which might have been arranged, but get out.

A rather terrifying combination of circumstances to a man who believed that all he needed to do was to pay the very low price and take the property over.

Suit was brought to enforce the option and the case was hurried to a trial. Both the agent and all the owners swore that the former had no authority to give any option on the real estate, his power being confined to leasing only. Of course the tenant had no evidence against this and the judge told the jury that if they believed the testimony of the witnesses who said the agent had no power to give an option, they should find a verdict that the option was of no validity. And that is what they did, for there was no alternative.

I don't know what became of the merchant. His lawyer told him there was absolutely no use in appealing, and he was compelled to move out of the neighborhood, the work of five years—highly profitable work, too—wholly wasted. Hard luck, you say, so it was, in a sense, though more accurately it was the result of his own negligence. It is fundamental that an agent in charge of real estate cannot give a binding option to sell it unless he has express authority to do so, and usually that authority must be in writing and under seal. This is from a leading case on the subject:

Authority to an agent to manage, control and lease property does not authorize an attorney in fact or an agent to sell and transfer the property.

Authority to sell land does not imply authority to rent it and authority to rent it does not imply authority to sell it.

Authority to superintend real estate and lease it for more than one year does not include authority to lease real estate with the privilege of purchasing any part of it during the continuance of the lease.

In other words, before an agent can bind the owner of real estate in giving an option to a tenant to purchase, the owner must have explicitly empowered the agent, in writing, to do that very thing. The merchant in the case I have reported should have satisfied himself that the agent had this power before he took his option.

---

(Copyright, January, 1918, by Elton J. Buckley.)

**Over 11,900 retail merchants failed last year**

Bankers and wholesalers are interested in these figures. They lose when the merchant fails.

Up-to-date National Cash Registers stop lax methods in Retail Stores—save time, work and money.

And they enable a merchant without delay to give a complete, reliable statement of his business.

Every banker and wholesaler should investigate the N. C. R. System. He will then recommend it to the merchant.

Our registers are sold on small monthly payments. 5 per cent off for cash.

*Write today for literature* *Address Department 36.*

**THE NATIONAL CASH REGISTER COMPANY, Dayton, Ohio**

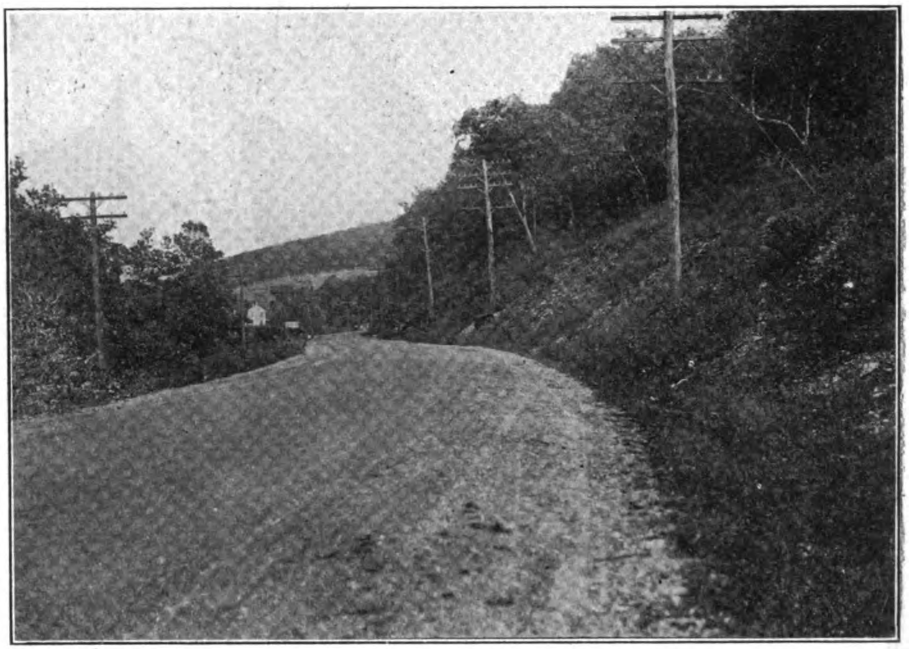
# Experiment With Non-Skid Road Surface

THERE is, perhaps, no factor responsible for so many accidents as skidding automobiles, due to slippery pavements. In addition to this horse drawn vehicles have almost as much trouble on slippery pavements and many a good horse has been injured through bad falls on hard surfaced roads.

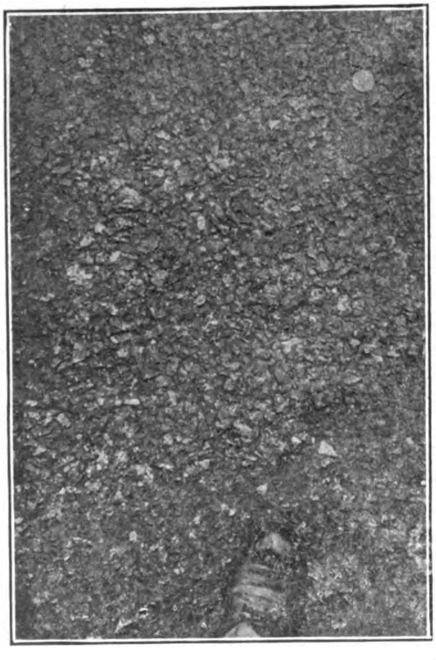
Modern road engineers are working for road efficiency and consequently direct their efforts toward the production of a road surface which will present a hard, smooth face and be impervious to wear as far as possible. They are not concerned with the skidding problem, but aim to produce a wearing surface, for they know that drivers will adopt methods to prevent skidding, even though such means result in damage to their machines to a certain extent.

Chains and rough tread tires are the usual devices used to prevent wheel slippage, though at best they are not efficent. With the use of chains comes the excessive tire wear. Rough or non-skid tires answer the purpose to a certain extent and though such a tire may be efficient when new, sooner or later when the tread is worn off, the tire precents a smooth surface and the danger increases.

Very little work has been towards attacking this problem from the standpoint of the road surface. Of course steep grades have been paved with stone block or with hillside brick, but this is quite expensive and is not a satisfactory paving for long, level stretches of roads. A rather interesting step has recently been made towards developing a non-skid road surface suitable for average conditions.



View of a Pontared Road on the Frederick Pike at Ellicott City, Maryland.



Looking Down on Road Surfaced with Pontar, Showing Comparative Size of Pits with 25 Cent Piece.

In the hilly districts of Western Maryland a closely watched experiment is being conducted on a tar bound macadam surface over a water bound macadam foundation. Several grades of tar binder, as a surface treatment, have been previously used, but under heavy rolling and continued traffic the binder had flushed up through the stone chip covering, making a smooth surface. In fact, such a surface, after being in use for a short while, has closely resembled the smooth surface of an asphalt paved street, which when wet and cold was exceedingly slippery for horses and caused dangerous skidding of automobiles and trucks.

This year a special grade of Pontar was used on the surface as a binder, and it is hoped a non-skid surface has resulted, for up to the present time the results have been very encouraging. This binder was put on in the same manner as the ordinary tar surface treatments, and covered with stone chips. There is this difference, however, that under heavy rolling and continued traffic the binder has not flushed completely up over the chip covering. This has resulted in a slightly pitted surface, somewhat resembling smallpox markings, on the face of the road. In the accompanying photograph, which was taken looking directly down upon the surface of the road, these small pits are shown to good effect. The small round white object near the upper right hand corner is a silver quarter dollar, which illustrates the comparative size of the pits. Under wet weather conditions this surface has proven a great benefit, as the skidding of automobiles and trucks has been greatly reduced, the action of the pits upon the tire surface being similar, if not the same, as the action of non-skid tire cups upon a smooth, hard road. In addition to this the footing is rendered much safer for horses.

While the surface has demonstrated its fitness for non-skidding when wet, just how it will behave under winter conditions of ice and sleet is yet to be shown. Every indication points to at least a fair showing in this respect when compared to an absolutely smooth surface. If it should be effective in stopping or reducing the dangerous slipperiness occasioned by winter conditions, a long step will have been made towards "Safety First" travel. Then also, a great saving will have been effected in the wear on automobile tires by doing away with the necessity for using chains, which cut and bruise the tire fabric when used on hard surfaced roads.

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## GREENFIELD TAP AND DIE ADMINISTRATION BUILDING.

The Greenfield Tap and Die Corporation, Greenfield, Mass., will open its new administration building for public inspection on Tuesday, March 5, and have issued invitations to the trade to visit the new structure, which has been erected with the object of increasing the efficiency of the administrative organization of the company.

With the new offices opened the officials will be able to coordinate the administrative work of the rather widely scattered plants. Heretofore each plant has maintained its own offices and shipping room, but hereafter the office work incident to the manufacturing operations in the various plants will be concentrated in the new building. Some idea of the extensive manufacturing operations in the Greenfield plants is revealed by the fact that approximately 125 persons are employed in the office end alone.

# Speederator Pulls in Cash

Speederator is proving the sure-fire hit in the Ford accessory field.

Our page advertisement in the January 26 Saturday Evening Post has flooded us with orders.

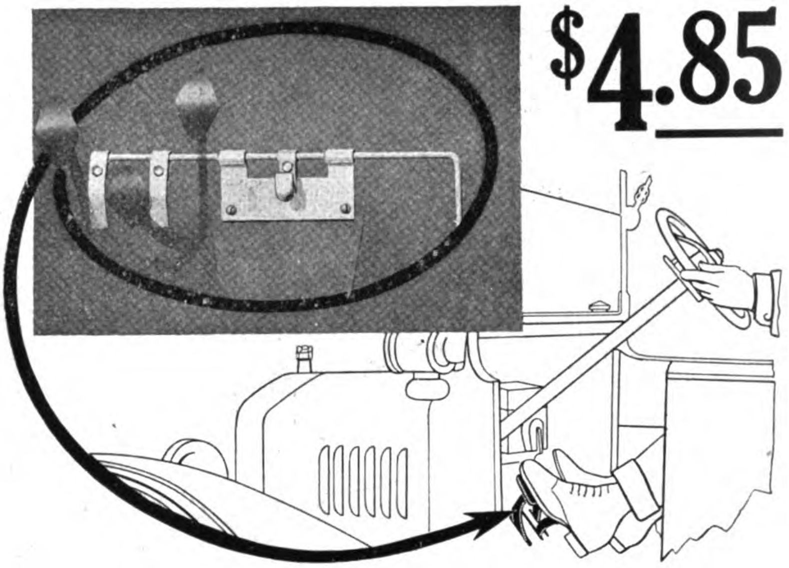
Dealers in every part of the country are writing and wiring us that Speederator is one of the fastest sellers they ever handled.

When spring brings the stored cars out into the open the demand will be even greater.

And we're going to stimulate it with a big national advertising campaign starting in April.

So get in now with your orders.

**$4.85**



## SPEEDERATOR

*Makes Your Ford Act Like a Six*

### Money back if Buyer is not Satisfied

Speederator is sold on a positive money back guarantee.

If the buyer is not absolutely satisfied he gets his money back without argument any time within 30 days.

There are no strings to this money-back proposition.

We back the dealer all the way in this offer.

### Foot Pedals Work Speederator

The driver don't have to learn to use the Speederator.

He simply works the Ford foot pedals as he always has.

You don't have to touch the hand throttle.

Speederator connects with the carburetor and automatically regulates the engine speed to the load.

### Ford Officials Use Speederators

Officials of the Ford Motor Company use Speederator on their personal cars.

They give this wonderful device the highest praise.

So do thousands of motorists who have had Speederator installed on their cars within the past year.

We have never had a kick from a Speederator user.

### Put It On In 20 Minutes

Anyone can put Speederator on a Ford in 20 minutes.

A screw driver and a pair of pliers are all the tools needed.

It is out of sight under the foot board. You don't have to bore a hole.

Speederator is wonderfully simple, but it is a mechanical miracle in what it does to help Ford performance.

*Order from your jobber today, or write us direct.*
*It will be a big money maker in 1918.*

**Versal Products Manufacturing Company**
Formerly The Detroit Starter Company
DETROIT, MICHIGAN

(When Writing to Advertisers, Please Mention the Accessory and Garage Journal.)

ONE GALLON
BLUE RIBBON
TRADE MARK
REGISTERED U.S. PAT OFFICE
GREASELESS CREAM
AUTOMOBILE
BODY GLOSS
DIRECTIONS
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## KEEPS THE BODY OF YOUR CAR *Shining* LIKE A MIRROR

No Grease to Catch Dust
Does Not Coat the Finish
Best Furniture Polish Made
Use With Spray if Desired

**International Metal Polish Co.**
INDIANAPOLIS, INDIANA

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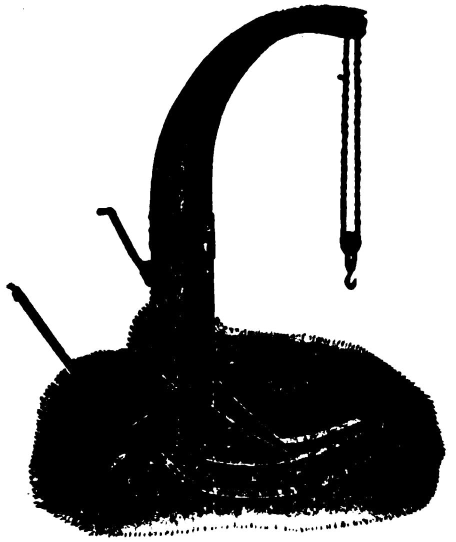

SAFETY FIRST

## *The "Lafayette" Portable Steel Crane*

Made of steel—it will not break. Double locked with load. Safe. Low base. Ample power. Roller bearings. No garage or repair shop can afford to be without them. A complete hoisting and conveying machine.

STANDARD SIZES

| No. | Height | Overhang | Capacity | Ht. of Base | Weight | List |
|---|---|---|---|---|---|---|
| 6 | 8'-6" | 3'-6" | 5000 lbs. | 8 inches | 900 lbs. | $100.00 |
| 5 | 7'-6" | 3'-0" | 4000 lbs. | 7 inches | 700 lbs. | $85.00 |
| 4 | 6'-6" | 2'-6" | 3000 lbs. | 6 inches | 500 lbs. | $70.00 |

*For Sale by Jobbers Everywhere or Write*

**The LaFayette Engineering Co., Mfgr's, LaFayette, Indiana**

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## DETROIT BATTERIES

For every make and model of motor car carrying an electric starting system. Replacements on cars no longer manufactured can be had promptly.

**Detroit Battery Co.**
Detroit, U. S. A.

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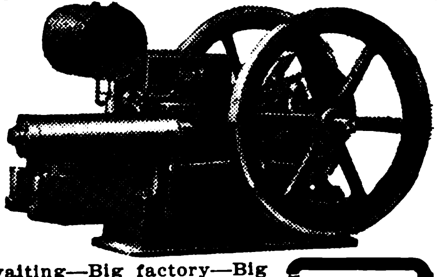
## WITTE "Kero-Oil" Engines



**All Styles**
**Immediate Shipment**
**From Factory**

2 to 22 H. P.—No waiting—Big factory—Big output—Prices most favorable. Write for my terms and prices on Garage Engines, Gasoline, Gas, Kerosene or Distillate. Get my new FREE Book, **"How to Judge Engines,"** before you buy any engine at any price.
ED. H. WITTE, Pres.

**I Save You $15 to $200**

WITTE ENGINE WORKS
2289 Oakland Ave. Kansas City, Mo.
2288 Empire Bldg. Pittsburg, Pa.

SELL SULLIVAN TRUCKS

One of the few staple and practical trucks on the market.

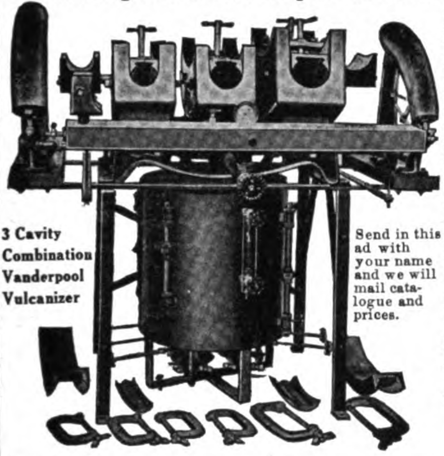
Our selling policy and proposition is the most liberal ever offered to the trade.

**One Model, 3,000 Lbs. Capacity**
**Chassis Price, $1,600**

*Write for complete details*

SULLIVAN MOTOR CAR CO.
Rochester, New York

**Vulcanizing With a Vanderpool Vulcanizer Brings Big Profits**



3 Cavity Combination Vanderpool Vulcanizer

Here is an exceptional opportunity for Garages as well as Vulcanizing Companies to secure a vulcanizer that will turn out high-grade work at a small cost. The fuel saved alone will pay for the machine in a short time—then you will "cash in" on your investment. This plant, the Vanderpool Vulcanizer, is meeting with enthusiastic approval of hundreds of satisfied users all over the country. Unsolicited testimonials from the various companies now using the "Vanderpool" testify to the dependability, efficiency and economy of this "Vulcanizing Wonder." One man writes that the first month's profits paid for the plant. No experience needed—we teach you how. It occupies very little floor space, and "once bought, you will never have to buy again."

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Springfield, Ohio

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DISCHARGE
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AMPERES
B-W MFG. CO.
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STURDILY CONSTRUCTED to retain accuracy under the most severe conditions. Handsome in appearance. Made in both flush and surface types. Finished in bright nickel or black rubberoid as desired.

**Better Ammeters Cannot Be Purchased,**
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Guaranteed Bearings
We Exchange Rebuilt Bearings for old or worn ones
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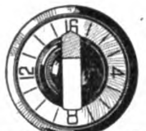
Locks the heart of the Automobile—the carburetor



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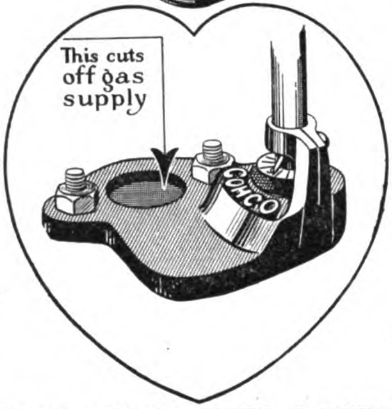
This cuts off gas supply
COMCO

*Jobbers and Dealers: Write Today.*

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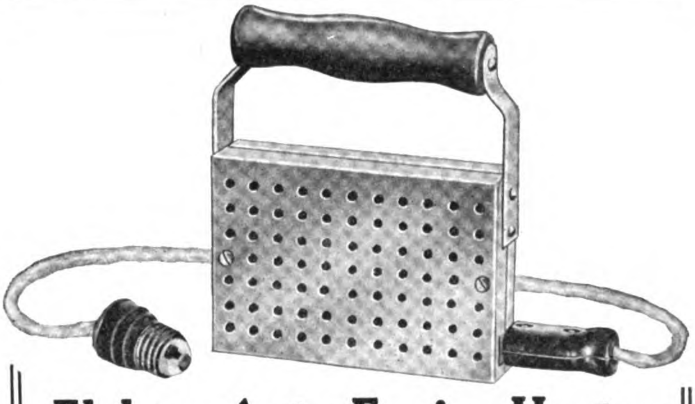
1130 Chestnut St. St. Louis



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1790 BROADWAY NEW YORK

Ball, Roller, Thrust and Combination Bearings.

## INDEX TO ADVERTISERS

| | Page |
|---|---|
| Adamson Mfg. Co. | 3 |
| Advance Auto Accessories Corp | 5 |
| American Bureau of Engineering, Inc | 56 |
| Auglaize Motor Car Co | 57 |
| Auto Exchange | 58 |
| Auto Parts Co | 58 |
| Auto Salvage Co., Inc | 58 |
| Auto Wrecking Co | 58 |
| Bacon Service Co | 64 |
| Ballman-Whitten Mfg. Co | 53 |
| Bearings Service Co | 62 |
| Bilodeau Ball Bearing Works | 53 |
| Boston Auto Parts Co | 59 |
| Bowser & Co., Inc., S. F | 62 |
| Box 888 | 58 |
| Brown, Walter H | 59 |
| Brunner Mfg. Co | 4 |
| Bunting Brass & Bronze Co | 62 |
| Carborundum Co | 2 |
| Champion Ignition Co | 6 |
| Chase & Co., L. C | Cover |
| Columbus Varnish Co | 59 |
| Combination Auto Lock Co | 53 |
| Corning Glass Works | 33-D |
| Corp Brothers | 59 |
| Curtis Pneumatic Machinery Co | 63 |
| Detroit Battery Co | 52 |
| Detroit Magneto Exchange | 58 |
| Dixon Crucible Co., Jos | 64 |
| Dyer Co., G. H | 1 |
| Dyneto Electric Corp | 33-C |
| Faw, Inc., J. H | 55 |
| Fitzgerald Mfg. Co | 12 |
| Gallagher, J., Edward | 58 |
| Garford Motor Truck Co | 62 |
| Gleason, John L | 56 |
| Government Advs | 10-11 |
| Greenfield Tap and Die Corp | 61 |
| Harvey Spring & Forging Co | 63 |
| Higgins Spring & Axle Co | 33-A |
| Hughes & Co., D. C | 53 |
| Imperial Brass Mfg. Co | 64 |
| International Lubricants Co | 60 |
| International Metal Polish Co | 52 |
| International Motor Products Co | 57 |

## INDEX TO ADVERTISERS

(Continued)

Page
J & B Mfg. Co. .... 33-B
Jefferson Electric Mfg. Co. .... 56
Jenkins Vulcan Spring Co. .... 62

Kennedy Car Liner and Bag Co. .... 64

La Fayette Engineering Co. .... 52
Lenthe, D. .... 59

Mabey's Electric and Mfg. Co. .... 63
Manufacturers Glass Co. .... 59
Manufacturer 910 .... 59
Martin Mfg. Co. .... 63
Mossberg Co., Frank .... Cover
Motor Specialties Co. .... 8
Mueller & Co., R. S. .... 63

National Cash Register Co. .... 49
New Departure Mfg. Co. .... 64
New Era Spring and Specialty Co. .... 64
Niehoff & Co., Inc., Paul G. .... 56
Norma Co. of America .... 54

Pierce Governor Co. .... 62
Piston Ring Co. .... 61
Puritan Machine Co. .... 59

Rosenfield & Co., James .... 59
Ross-Gould List and Letter So. .... 62

Scaife, Wm. B. & Sons Co. .... 56
Schrader's Son, Inc., A. .... 57
Service Gear and Machine Co. .... 58
Shaler Co., C. A. .... 9
Specialty Manufacturing Co. .... 59
Starrett Co., L. S. .... 14
Stennman Electric Valve Grinder Co. .... 7
Stockbridge Body Co. .... 60
Sullivan Motor Car Co. .... 53

Tire Outlet Co. Inc. .... 59

United Engine & Mfg. Co. .... 56
United States Air Compressor Co. .... 7
United States Motor Truck Co. .... 13

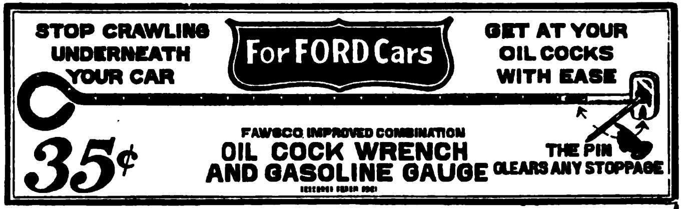
Vanderpool Co. .... 53
Versal Products Mfg. Co. .... 51

Walden-Worcester, Inc. .... Cover
Weston Electrical Instrument Co. .... 57
Williams Foundry and Machine Co. .... 56
Wisconsin Auto Top Co. .... Cover
Witte Engine Works .... 52

**Fawsco IMPROVED Combination**

**Gasoline Gauge**

**Oil Cock Wrench and Cleaner**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GET AT YOUR OIL COCKS WITH EASE
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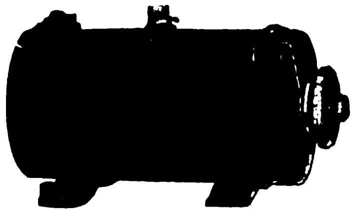

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# JEFFERSON 6 and 12 VOLT BATTERY IGNITION COILS

although few in number are interchangeable with any style of coil used with Standard Battery Ignition.

These coils are particularly noticeable because of their workmanship, flexibility, simple construction and completeness of detail.

A coil for every requirement in the ignition field.

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VOLTS

AMBU Electric Trouble Shooter is an instrument which automatically detects and locates accurately and quickly trouble in any American made starting and lighting system used as standard on any American made cars—

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are positively guaranteed to hold air indefinitely without loss of pressure.

**CAUTION**

Do not confuse Scaife Copper-Brazed Tanks with the cheap Welded or Soft-Soldered Tanks made by others.

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## Patent For Sale

Serial No. 1251998, issued Jan. 1, 1918, covering Signal Device for Motor Vehicles, designed to indicate at night that a turn is to be made, and the direction thereof. Copies of the above patent may be obtained for five cents each in currency, by addressing the Commissioner of Patents, Washington, D. C.

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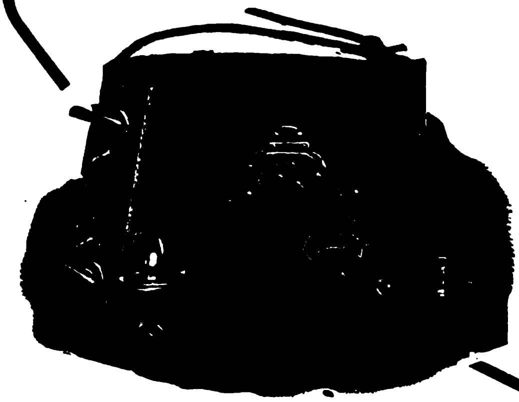
Hanover, Pa.

## *Don't Send Your Customers to Another Garage!*



If you cannot repair electric starting and lighting equipment intelligently, your customer will go elsewhere for this service. He will take the rest of his trade with him. There is more money in electrical repairs than in any other department of the garage business. The demand is enormously increasing.

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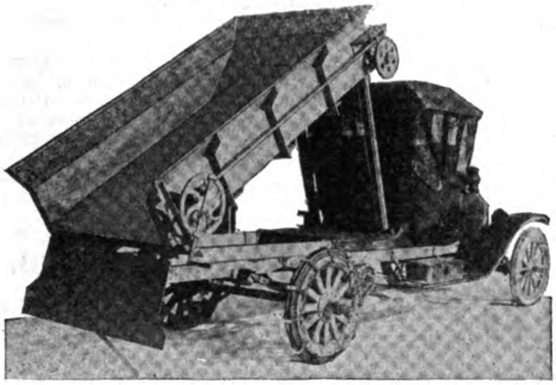

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Price $206.25 for body and hoist complete ready to mount on chassis frame.

Bodies two sizes, capacity in pounds the same.

Size of the one cu. yd. body 96x44x12 in., straight sides only. Carrying capacity from 2700 to 3000 pounds of gravel, sand or crushed stone.

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Approximate weight of either body is 550 pounds.

**Builders of Hoists ranging in capacity from one to five tons.**

***Ask for dealer's proposition***

**THE AUGLAIZE MOTOR CAR CO.**
New Bremen, Ohio

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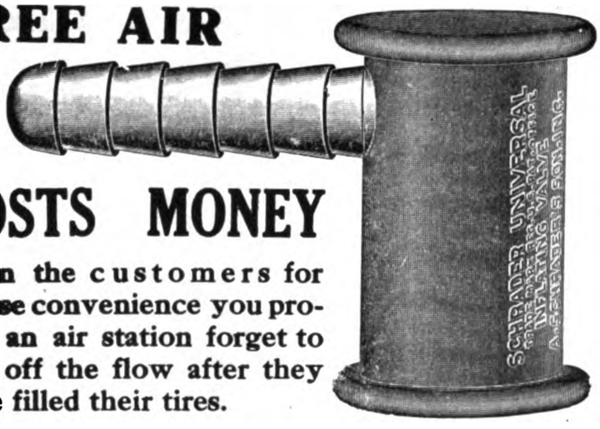
## COSTS MONEY

**when** the customers for **whose** convenience you pro**vide** an air station forget to **turn** off the flow after they **have** filled their tires.



**Guard against this waste by attaching a**

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**to your air hose.**

**Thanks to this appliance your bottled air locks itself into the tank the minute it is taken off the tire-valve. You turn on the air by pressing the nozzle of the inflating valve against the tire-valve and you turn it off by removing the device from the tire-valve.**

**Made to fit any diameter of hose from ¼ in. to ⅝ in.**

**PRICE $1.25**
**in U. S. A.**

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A combination Heating Unit comprising Moistener, Electric Super-Heater Primer, Exhaust Super-Heater and Accelerator.

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A smoother and more flexible engine with carbon—Practically Eliminated.

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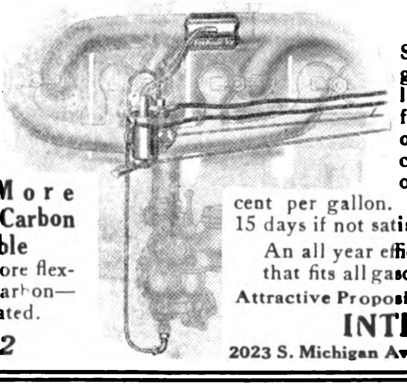
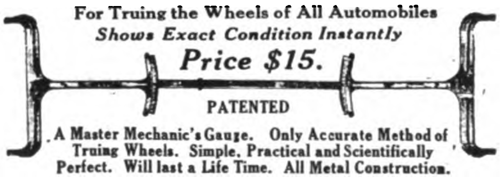


Starts a cold engine instantly. Increased satisfaction in the operation of your car with a saving of 25 to 60 per cent per gallon. Money back in 15 days if not satisfactory.

An all year efficiency device that fits all gasoline engines.

Attractive Proposition for Dealers.

## Perfection Wheel Truing Gauge


For Truing the Wheels of All Automobiles
Shows Exact Condition Instantly
Price $15.
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Keep Your Wheels in Alignment.

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| Bosch D4 and Dr4 | 25.00 |
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| Splitdorf 4 cyl., Models A, T, X and D | 10.00 |
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**1240 Dorchester Avenue, Boston, Mass.**

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## Radiators—Fenders

Automobile repair work in all its branches. Doing the most satisfactory work. Skilled workmen, good materials, moderate charges. Radiators, Fenders, Hoods, Tanks, Boxes, Pans, Sheet Metal work.

Insure your Radiator from freezing by using

**PEERLESS ANTIFREEZE.**

It prevents loss of use of car and loss of time resulting from laying up of car.

**WALTER H. BROWN**
**18 Cambria St., Boston, Mass.**

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## TIRE DEALERS

**STOCK UP.**
**Write or Phone.**

**Tire Outlet Co. Inc.**
211 Columbus Ave., Boston, Mass.
Phone Back Bay 2821.

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**WANTED—SCRAP IRON**

In any condition and any quantity. Paying the highest market prices. Get our prices before selling. Phone Chelsea, 51460.

**JAMES ROSENFIELD & CO.,**
**Scrap Irons, Steel and Metals.**
**88 Elm St., Chelsea, Mass.**

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BOSCH MAGNETOS; all models; Eisemann, Splitdorf and Remy Magnetos always on hand. Price list sent. D Lenthe, Ordway Bldg., Newark, N. J.

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## SUPERIOR
## Parts and Brushes

For All

**Ignition and Starting Lighting Systems**

Used for Years by the Best Repair Shops Everywhere.

***"They Last Longer but Cost Less"***

Write for Catalogue.

Rebuilt Bosch High Tension Magnetos $12.50 up. Warranted to give perfect satisfaction or money will be refunded.

**Specialty Manufacturing Co.**
**637 Massachusetts Ave., Arlington, Mass.**
Phone Arlington 99-M.

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**PEERLESS MOHAIR TOP DRESSING.**

Waterproofs, dresses and dyes mohair, duck and canvas tops and curtains like new. Dries over night, leaving tops soft and pliable.

*Sold by Garages and Auto Supply Stores.*

**THE COLUMBUS VARNISH CO.**
**Columbus Ohio**

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**PEERLESS LEATHER TOP DRESSING.**

An oil dressing to renew the finish and keep rubber, leather and pantasote tops and curtains soft and pliable. Dries over night. Not for seats or cushions.

*Sold by Garages and Auto Supply Stores.*

**THE COLUMBUS VARNISH CO.**
**Columbus Ohio**

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**PEERLESS FORD TOP DRESSING.**

A dressing made for Ford top material, making a rich, black gloss, adding life and color to old tops. Dries over night, wears indefinitely.

*Sold by Garages and Auto Supply Stores.*

**THE COLUMBUS VARNISH CO.**
**Columbus Ohio**

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**PEERLESS CUSHION DRESSING.**

Without danger of washing or rubbing off. It brightens and renews the finish of leather seats and cushions. Dries in twenty minutes.

*Sold by Garages and Auto Supply Stores.*

**THE COLUMBUS VARNISH CO.**
**Columbus Ohio**

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**PEERLESS LAMP ENAMEL.**
Gloss and Dull.

A fine enamel, either gloss or dull finish for lamps and similar parts. One coat covers solid over the metal or old enamel. Air drying over night.

*Sold by Garages and Auto Supply Stores.*

**THE COLUMBUS VARNISH CO.**
**Columbus Ohio**

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**PEERLESS CYLINDER ENAMEL.**
Black and Gray.

A fine enamel that resists heat, grease and gasoline and protects all metal parts from rust and wear. Air dries over night.

*Sold by Garages and Auto Supply Stores.*

**THE COLUMBUS VARNISH CO.**
**Columbus Ohio**

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**PURITAN SPECIALS.**

| | |
|---|---|
| Rear Axles, all makes | $40.00 up |
| Front Axles | 10.00 up |
| Radiators for all cars | 19.50 up |
| Buick Radiators, special price | 25.00 |
| Motors—4 and 6-cyl | 49.50 up |

Send for specification sheet.

| | |
|---|---|
| Demountable Rims—all types | 3.00 up |
| Wheels—All sizes | 3.00 up |
| 6 volt Auto Lite Generators | 12.50 |
| 18 inch Steering Wheels | 2.50 up |

**FORD SPECIALS.**

| | |
|---|---|
| Seat Covers—Set | $3.50 |
| Mohair Top Roofs—Repair your own top | 4.50 |
| Stewart Speedometers—Complete ready to attach | 6.19 |
| Crown Fenders—Set | 13.00 |
| 1.50 Mosler Spark Plugs | .43 |
| Top Slip Boots | 1.25 |

**CARBURETORS.**

**Zenith, Stromberg, Rayfield, Schebler.**

| | |
|---|---|
| Schebler, model R, all sizes | $12.00 |
| Schebler, model L, 1", 1¼", 1½" | 5.95 |
| Carter, 1" | 3.95 |

**MAXWELL BODIES.**

Beautiful, brand new, streamline bodies, fully upholstered and painted; can be easily made to fit Fords, Chevrolet 490, Overland, Dort, Monroe, Paige, R. C. H., Hudson 20 and many other light cars.

| | |
|---|---|
| Roadster type | $30.00 |
| Touring type | $35.00 |

Write for a copy of our bargain bulletin. All accessories. Wholesale and Retail.

**PURITAN MACHINE COMPANY.**
**All Parts for All Cars.**
**51 Tenth St. Detroit, Mich.**

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**SALESMEN WANTED.**

Selling Automobile Accessories, to handle as side line, Lens Glass for Automobile Headlights. Big seller.

**MANUFACTURERS GLASS CO.,**
**38 S. Dearborn St., Chicago, Ill.**

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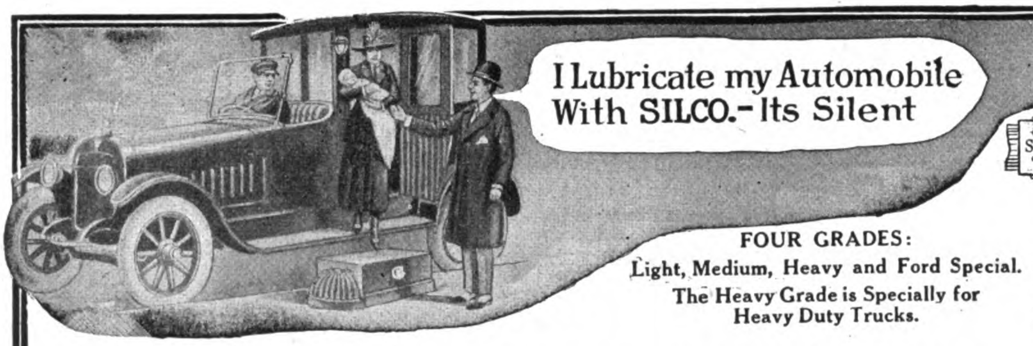
**SALESMAN calling on power plants and garages to handle Asbestos Packings of superior quality; exceptional chance to increase your income; liberal commission. Manufacturer 910, Havemeyer Bldg., New York City.**


I Lubricate my Automobile With SILCO.-Its Silent

FOUR GRADES:
Light, Medium, Heavy and Ford Special.
The Heavy Grade is Specially for
Heavy Duty Trucks.

SILCO is the perfect lubricant for transmission and differential gears. It possesses far greater lubricating properties than ordinary greases. It forms a positive and lasting cushion between all points of contact, and quiets noisy gears. Silco does not leak or drip, and its efficiency is unaffected by heat or cold.

SILCO minimizes friction, and eliminates expansion from heat, thus preventing undue wear on gears and bearings. Cuts repair bills and is guaranteed to afford entire satisfaction.

*Jobbers and Dealers: Our inducements are extremely liberal. Send for further lubricating facts and special trade discounts.*

*WRITE TODAY TO*

**INTERNATIONAL LUBRICANTS COMPANY**

Manufacturers of SILCO Products

Home Office:
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New York Office:
51 East 42nd Street.

THE CONGDON & CARPENTER CO., Rhode Island Distributors, Providence, R. I.

AUTOMOBILE
SMOOTH SILCO AS SILK
LUBRICANTS

**LOOK FOR THIS TRADE MARK**

**IT PROTECTS THE DEALER AND CONSUMER**

**SILCO**

**TRANSMISSION AND DIFFERENTIAL GREASE**

**STOPS THE LEAKS**

**FINDS THE SQUEAKS**

**INSURES CAR SERVICE**

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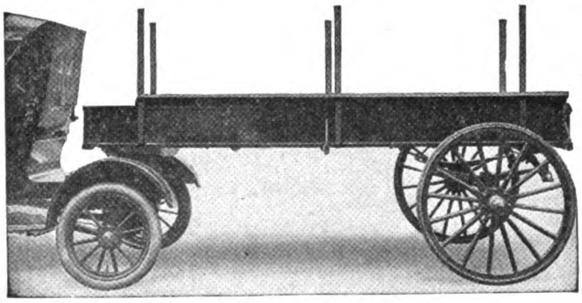
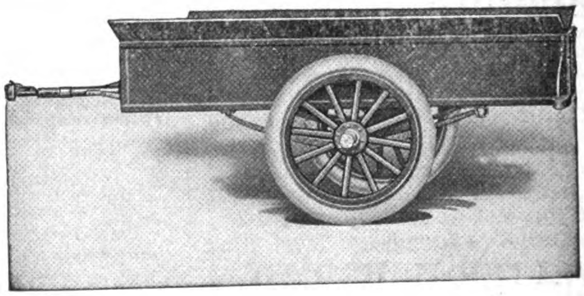




# Haul a 3000-lb. Load With Your Ford Car

A Ford runabout equipped with a Rocking Fifth Wheel, will have light truck capacity when used with **STOCKBRIDGE** 2000 or 3000 pound semi-trailers, and by uncoupling the body, which can be done in a very few minutes, the machine has all the utility of the pleasure car.

**STOCKBRIDGE Semi-Trailers** are the most practical equipment built. They are designed for truck service. They are operated with Ford economy. They can be coupled or uncoupled by any driver without help. The Rocking Fifth Wheel is easily removed. No time is lost. Simply remove six bolts. The owner has a car or a unit with truck capacity and makes no sacrifice of the qualities of either type of vehicle.

The car and semi-trailer can make 20 miles an hour on good roads and can climb any travelled grade.

**STOCKBRIDGE Semi-Trailers** are constructed for truck service. The bodies are express type, with flareboards or flareboards and stakes. The brief specifications are:

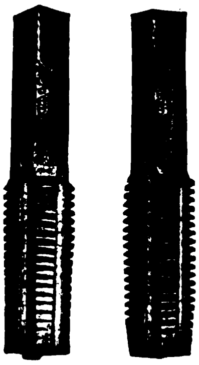
| | 2000 Pounds | 3000 Pounds |
|---|---|---|
| AXLE | 1 5-8 in. square, Timken roller bearings. | |
| SPRINGS | Platform type, 1 3-4 in. wide | Platform type, 2 in. wide |
| WHEELS | 46 in. outside diameter, artillery type hubs, 1 5-8 in. spokes | |
| TIRES | Solid rubber, 1 3-4 in. flat top. side wire | 2 in. flat top. side wire |
| EQUIPMENT | Complete Rocking Fifth Wheel ready for attaching | |
| PRICES | $195, f. o. b. Springfield, Mass. | $225 f. o. b. Springfield, Mass. |

**SPRINGFIELD TRAILER,** 800 pounds capacity, express body, semi-elliptic springs, 1 1-4 in. axle, ball bearings, 12-spoke automobile wheels, 30x3 in. pneumatic tires, price **$105,** f. o. b. Springfield.

**STOCKBRIDGE BODY COMPANY,** 130-6 UNION STREET
SPRINGFIELD, MASSACHUSETTS

Little Giant Screw Plate

# The Complete Line of Threading Tools



Hand Taps

Whatever your requirements in the screw cutting line may be, we can meet them, as our line is the most complete in the world. Bear in mind that our service in the threading tool line is unexcelled.

Ask for a copy of our No. 37 general catalog which contains besides the products listed below many tables of valuable information for garage repair men, etc.

Below is a partial list of products shown in the catalog.

Little Giant Die

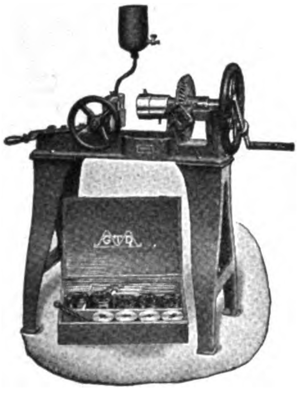
**Taps**—All kinds, for hand and machine use, in all thread standards.

**Dies**—Several styles, for hand and machine use, in all thread standards.

**Screw Plates**—Many styles and assortments for bolts, nuts and pipe, with Automobile (S.A.E.), U.S.S. or V threads, combination assortments with both U.S.S. and S.A.E. thread taps and dies.

**Pipe Tools**, Wrenches, Vises, Cutters, Stocks and Dies.

**Reamers**—Hand and Machine, bitbrace and straight shanks, all types.



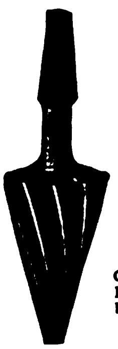
G. T. D. Threading Machine

Send for a catalog for ready reference.

**Greenfield Tap and Die Corporation**

**Greenfield, Mass.**

New York, 28 Warren St.
Chicago, 13 South Clinton St.
Canadian Factory, Wells Brothers Company of Canada, Ltd., Galt, Ont.



G. T. D. Burring Reamer

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# STA-TITE Piston Rings

Play an Important Part in the Success of America's Leading Automobiles, Motor Trucks and Tractors.

Every automobile engineer will tell you that the Life, Power, Speed, Hill Climbing Ability and Operating Cost of a gasoline driven vehicle depends on its motor.

The strength and power of any motor depends largely on its compression. Perfect Compression means an efficient, clean, smooth running motor.

A motor without perfect compression is troubled with improper lubrication, lack of power, and an accumulation of carbon.

STA-TITE RINGS give Perfect Compression and overcome these troubles—besides saving on oil, gasoline and repair bills.

STA-TITE RINGS insure proper lubrication and prevent pistons from wearing dry and scoring cylinder.

STA-TITE RINGS are guaranteed to be leak proof.

**Dealers** You should sell STA-TITE RINGS. The three piece construction assures equal distribution of pressure on cylinder walls.

Remember—STA-TITE RINGS are manufactured by the largest manufacturers of piston rings in the world.

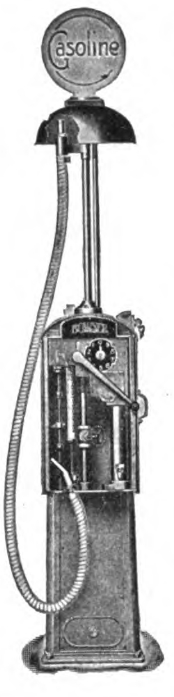
Send NOW—TO-DAY for "TWELVE REASONS" why STA-TITE RINGS will prove to be business builders.

THE Piston RING COMPANY
SPECIALISTS IN PISTON RINGS

110 Sanford St. Muskegon, Mich.

*Makers Also of "Quality" Snap Rings*

# Service
## Multiplied



Your customer of today calls louder and louder for "Speed." To him, quality and quantity without speed no longer constitute Service. Speed is his word—it means money to him.

The assistance, therefore, of equipment designed to meet the need of the hour is necessary, and you get it in

**BOWSER**
ESTABLISHED 1885

## *OIL and GASOLINE STORAGE SYSTEMS*

They store any amount of oil or gasoline—keep it in perfect condition; discharge quickly the exact amount of pure, filtered gasoline, directly into customer's car; show at a glance the correct charge. It's all done in a moment—no waiting, inconvenience or bother. Saves his time and yours.

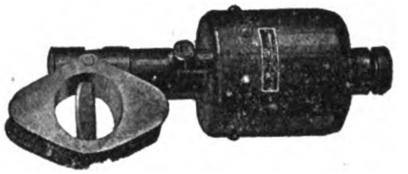
*Write for interesting literature*

**S. F. Bowser & Co., Inc.**
**Ft. Wayne, Indiana**

Sales Offices in All Centers, Representatives Everywhere.

BOWSER SERVICE

# PIERCE GOVERNORS



**are a positive guarantee of motor truck efficiency, because they provide automatic speed control. Now standard equipment**

**On 64 Makes of Motor Trucks**

**No better proof of superiority could be offered.**

**PIERCE GOVERNOR CO., Anderson, Ind.**

# Garford MOTOR TRUCKS

**Trucks of 1, 1½, 2, 3½, 5 and 6 ton capacity. 4½, 7 and 10 ton Tractors. The Garford Road Builder.**

**THE GARFORD MOTOR TRUCK CO., Lima, Ohio.**

## Do Business by Mail

**It's profitable, with accurate lists of prospects. Our catalogue contains vital information on Mail Advertising. Also prices and quantity on 6,000 national mailing lists, 99% guaranteed. Such as:**

War Material Mfrs.
Cheese Box Mfrs.
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Auto Owners
Wealthy Men
Ice Mfrs.
Doctors
Axle Grease Mfrs.
Fly Paper Mfrs.
Foundries
Farmers
Fish Hook Mfrs.

**Write for this valuable reference book. Also prices and samples of Fac-simile Letters.**

***Have us write or revise your Sales Letters.***

**Ross-Gould, 1015K Olive Street, St. Louis**

# Ross-Gould
## Mailing Lists St. Louis

# BEARINGS SERVICE COMPANY
Nation-wide Service on Bearings

**New York**
**San Francisco**
**Chicago**
**Los Angeles**
**Detroit**
**Boston**
**Seattle**
**Atlanta**
**Portland, Ore.**
**Pittsburg**
**St. Louis**

BEARINGS SERVICE COMPANY

**General Offices**
**Detroit, Michigan**

**Minneapolis**
**Omaha**
**Dallas**
**Kansas City**
**Cleveland**
**Rochester**
**Philadelphia**
**Denver**
**New Orleans**
**Indianapolis**
**Toronto, Can.**

# Bunting Bearing Bronze IN Cored Bars

BUNTING BEARING BRONZE

**Bunting Bearing Metal is standard today with both Manufacturer and Repairman.**

**Is for sale by most any Jobber or can be purchased direct from us.**

**STOCK SIZES**

| PIECE NO. | Outside Diameter | Inside Diameter | Length | Approximate weight |
|---|---|---|---|---|
| A | 1 | ½ | 12 | 2 |
| B | 1¼ | ½ | 12 | 3½ |
| C | 1½ | ¾ | 12 | 5 |
| D | 1¾ | ¾ | 12 | 7 |
| E | 2 | 1 | 12 | 8½ |
| F | 2¼ | 1¼ | 12 | 10 |
| G | 2½ | 1½ | 12 | 11½ |
| H | 2¾ | 1¾ | 12 | 12¾ |
| I | 3 | 2 | 12 | 13¾ |
| J | 3¼ | 2¼ | 12 | 15½ |
| K | 3½ | 2½ | 12 | 17 |
| L | 4 | 3 | 12 | 21 |
| M | 4¼ | 3¼ | 12 | 20 |

**The Bunting Brass & Bronze Co.**
**727 Spencer Street Toledo, Ohio**

VULCAN
QUALITY
AUTOMOBILE SPRINGS

*SPRINGS IN STOCK FOR ALL CARS*

90,000 Springs. 588 Types.

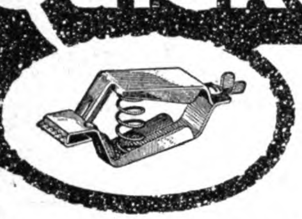
## 6—FACTORY BRANCHES—6

St. Louis, Mo 1402 Chestnut St.
Reading, Pa. 538 Franklin St.
Sumter S C. 29 Caldwell St.
Minneapolis, Minn. 1024 Hennepin Ave.
Dallas, Tex. 209 Houston St.
Richmond, Ind. Colonial Bldg.

FACTORY RICHMOND, IND.

JENKINS VULCAN SPRING CO.

# Quickens Battery Charging!



**TO CHARGE BATTERIES IN SERIES**

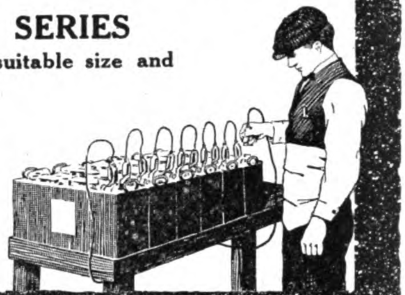
Provide a number of pieces of flexible cord of suitable size and length and equip at each end with

**UNIVERSAL BATTERY CLIPS**

Use these jumpers to connect the batteries by snapping the clips over the lugs. It isn't even necessary to clean dirty terminals—the teeth bite thru the corrosion and make a good contact.

The clips are made of steel, lead plated, and may be used over and over again. Our No. 21-A is shown above and has a 1 1-2 in. spread of jaws. Box of 10, $1.50. Substantial reduction on larger quantities. Sample 15c postpaid. From your jobber, or

**R. S. MUELLER & CO. 431 High Ave., S.E., Cleveland, Ohio**



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## *The Automobile Journal*

A quality Magazine with prestige and circulation that brings results to advertisers.

TIMES BUILDING
PAWTUCKET, R.I.

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ELECTRIC GLUE POT

Mabey's Dry Heat Electric

## Glue Pot

No flame; no soot or smoke. All danger of fire is eliminated

| Capacity | Price without cover |
|---|---|
| 1 qt. | $ 9.50 |
| 2 qts. | 11.00 |
| 3 qts. | 12.75 |
| 4 qts. | 15.75 |

**Century**

**Automobile Cigar Lighter, Complete $1.00 Each, F. O. B. Indianapolis.**

*DEALERS—Write For Prices.*

**MABEY'S ELECTRIC & MFG. CO.**

**968 Ft. Wayne Avenue INDIANAPOLIS, IND.**

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## Real Harvey RACINE Service

Speed in delivery, quality in materials, dependability in performance, accuracy in fit—these are the things which will win for you the loyalty and friendship of your customers—these are the things which combine to make Harvey Service predominant in the motor trade.

**There's A Harvey Jobber Near You**

Drop us a card and we will send you his name and our Spring Book giving complete weights, styles, measurements and prices of over 900 different kinds of springs. Write today—you may need Harvey Help tomorrow.

**Harvey Spring & Forging Co.**
851 17th St., Racine, Wis.

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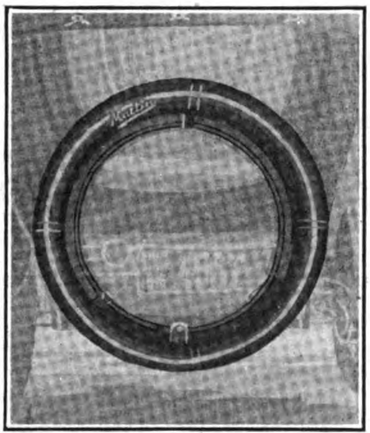
## Martin Tire Covers

The lowest priced, highest quality, fastest selling tire covers made.



**The Martin Style C Cover.**

A "sale on sight" line with all dealers. Will fit any tire whether carried on or off extra rims.

Sold in sizes listed. Made of heavy selected enameled drill, long lasting and attractive in appearance.

| Sizes | List Prices |
|---|---|
| 28-30 | $1.70 |
| 31-32 | 1.80 |
| 33-34 | 2.00 |
| 35-36 | 2.15 |
| 37-38 | 2.20 |
| 39-up | 3.00 |

**Jobbers and Dealers Write for Catalogues and Discounts.**

The Martin full line includes specialties that afford big returns to the trade.

**MARTIN MANUFACTURING CO.**
**Lancaster Ohio**

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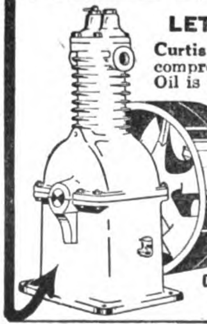
**CURTIS AIR FREE FROM OIL**

## MOTORISTS *Have* CONFIDENCE IN THIS SIGN



**LET THEM FIND IT AT *YOUR* DOOR.**

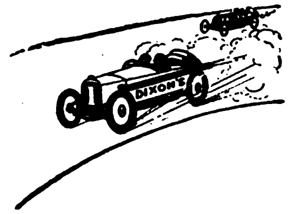
**Curtis Air** means more mileage, because **Curtis** is the only air compressor that can't flood cylinder with more oil than it can use. Oil is the enemy of rubber. It rots tires, causing blow-outs.

**A Curtis Compressor Is Dependable**

requires practically no attention, costs very little, quickly pays for itself, always delivers the kind of cool, clean air that makes tires last longer.

**5 sizes and 125 combinations.** Write for full particulars and let us tell you why the **Curtis** will prove to be your best investment. Ask your jobber for prices—but be sure and mention **Curtis**—the name is your protection against substitution

**CURTIS PNEUMATIC MACH. CO. 1621A Kienlen Ave. St. Louis, Mo.**
**Branch Office: 531A Hudson Terminal, New York**



**Dixon's Gain**

and hold customers for the farsighted dealer who sells the lubricants that deliver 100% service.

**DIXON'S**
**GRAPHITE**
**Automobile**
**LUBRICANTS**

will increase your customers' confidence in you.

*Write to us for Dixon's Dealer's Deal No. 49-G*

Made in Jersey City, N. J., by the

**JOSEPH DIXON CRUCIBLE CO.**

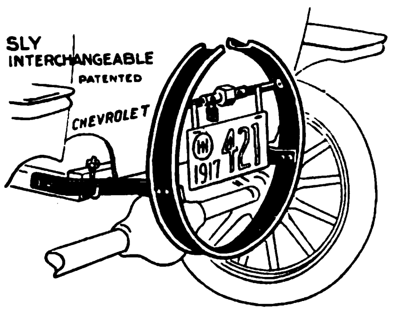
Established 1827

**Push Your Business —**

*I'll Show You How to Increase Your Winter Trade.*

THERE is business all around you. Good, profitable business that will bring in many an extra dollar. Don't wait for spring. Do business all winter. I'm helping garage men and supply dealers to do more business. I'll help you. Write on your business paper that you're ready for more business. I have nothing to sell but service backed by nine years' experience in promoting sales successfully.

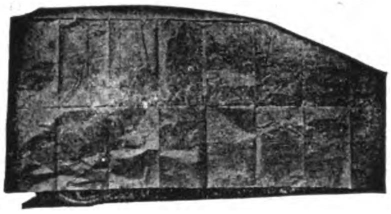
*Write*
**Edward W. Bacon**
**BACON SERVICE**
151 Grand St., New York



**SLY**
**Interchangeable and Cradle Type**
**TIRE HOLDERS**

Interchangeables quickly adjustable for all Ford and Chevrolet tires and demountable rims. Combines place for lamp, number plate, lock and tire, holding by expansion grip on inside of tire. No chafing. Clamps to Ford or Chevrolet frame without drilling or bolting. At all jobbers, or write

**New Era Spring & Specialty Co.**
1177 Hamilton Ave. Grand Rapids, Mich.



**KENNEDY AUTO STORAGE COVERS**

Furnish efficient and economical protection for cars in dead storage. They are made of heavy, durable paper in standard sizes to fit any cars.

MADE ONLY BY

**THE KENNEDY CAR LINER & BAG CO.**
SHELBYVILLE, IND.

**Imperial Primer**

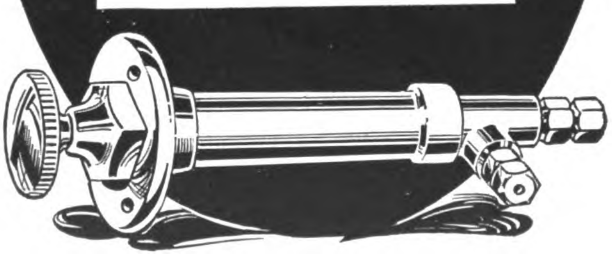
**A Profit-Line for Winter**

Motorists everywhere are looking up the live dealers and investing in the IMPERIAL PRIMER, the one device that Makes Cold Weather Starting Easy.

Easily and quickly installed on any make of car. Price $6.00 complete.

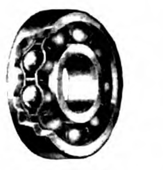
Write today for our proposition.

**IMPERIAL BRASS MFG. CO.**
517 S. Racine Ave., CHICAGO, ILL



**NEW DEPARTURE BALL BEARINGS**

*Strength*
*Stamina*
*Service*



The New Departure Manufacturing Co., Bristol, Conn.
*Conrad Patent Licensee*

# Dyneto

## LIGHT and POWER

## *Winter Business Means All Year Trade*

You know that the winter months make it hard sledding in the automobile game. The labor situation makes it necessary that you hold on to your working force. How can they earn their wages and make money for you?

This is the answer: Sell Dyneto Light and Power Plants in your community. Think of the many prospects within a few miles of you. They all want light and most of them have the purchasing power.

The Dyneto Light and Power Plant is easier to sell and offers more profit than a low priced automobile. Hundreds of garage men have adopted this plan of increasing their profits.

You will make many sales right in your garage. Your plant will pay for itself in lighting your garage and electric sign, running your air pump and lathe, or in charging batteries at a remarkably low cost. You can use it as a demonstrator to customers coming to your garage. But do not be content with that. Mount another plant on the back of an auto or on a trailer and send your men out after business.

Dyneto Light-and-Power Plants consist of a gasoline engine (gas or kerosene, if preferred), generator, switchboard and standard 16-cell storage-battery outfit. The engine is self-starting from the battery. Belted to a line-shaft the engine furnishes power for pumping water, running separator, milking machine, churn and for other power duty, while charging the batteries for light at the same time.

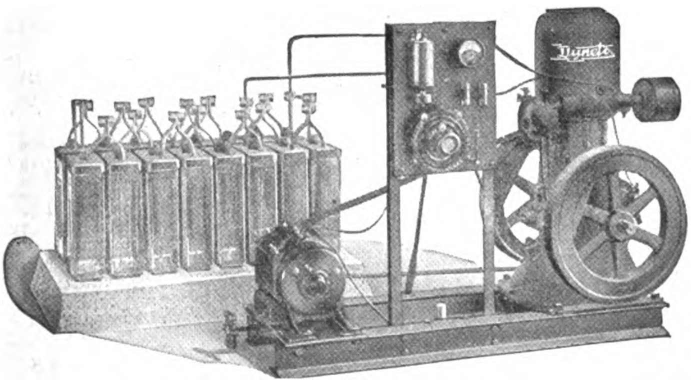
The Dyneto Plant is simple, trouble-proof, easy to install and care for. It can be furnished without engine if your customer already has an engine.

Plan to increase your profits by going after this business good and hard. Write to us today about the necessary steps.

## DYNETO ELECTRIC CORPORATION

**SYRACUSE NEW YORK**

**DYNETO DOES DOUBLE DUTY**
**LIGHT AND POWER**

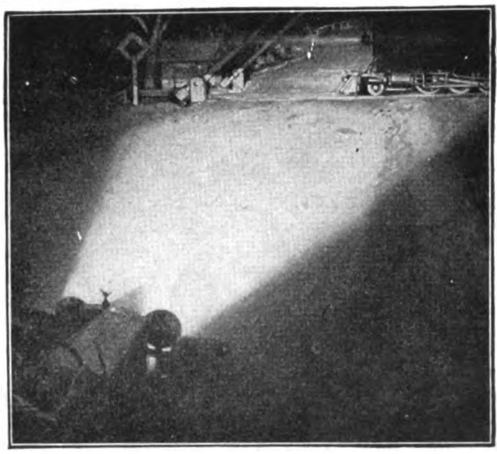


**Dyneto Electric Corporation**
**274 Wolf Street**
**SYRACUSE, N. Y.**

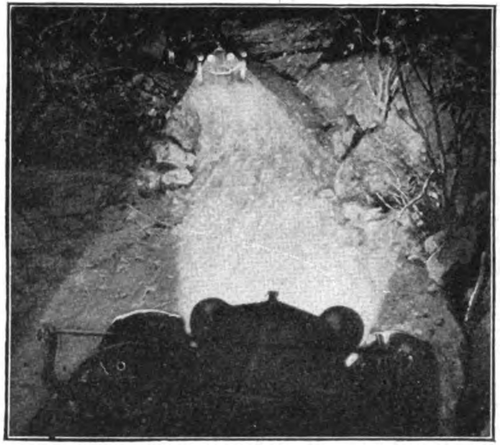
Please outline your proposition on selling Dyneto Light and Power Plants in this community.

Name ..................................................

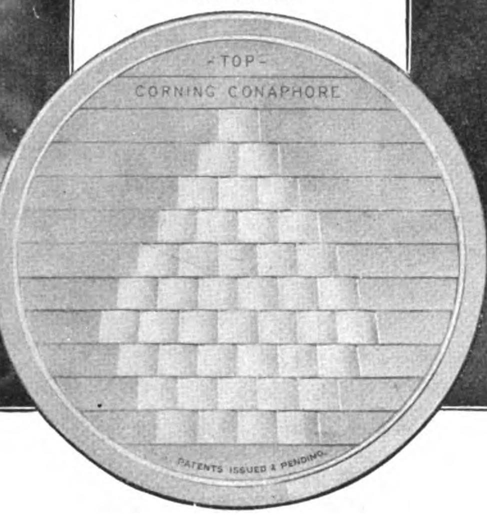
Address ..................................................



*Full 500 ft. range*

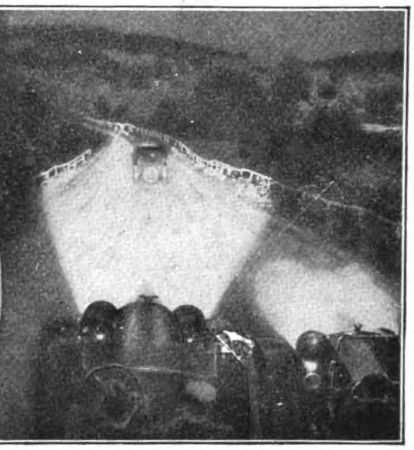


*All glare eliminated*



**THE CONAPHORE**
*Smooth front surface. Easily cleaned. Does not clog with dust or mud*

*Shoots right through fog*



*Pierces clouds of dust*

# Watch for these photographs in Conaphore advertising

## *They prove that the Conaphore is the most efficient headlight glass*

Conaphore advertising for 1918 in the leading national periodicals is featuring photographs which show the actual results obtained by the use of this remarkable headlight glass.

The four photographs reproduced above are typical examples. They give full proof that the Conaphore provides 500 ft. range, eliminates all glare, shoots right through fog and pierces clouds of dust.

**Full 500-ft. range**—Note how brightly the Conaphore beam shows up the engine. Then see how far beyond it illuminates the road. The Conaphore does not diffuse the light or dump it directly in front of the car. Instead it shoots it along the road for 500 feet.

**All glare eliminated**—Both these cars are equipped with Conaphores. The photograph shows them as they meet on a dangerous turn in the road. Note that there is no confusing glare from the headlights of either car. Both drivers can see plainly and the cars pass in safety.

**Shoots through fog**—The Conaphore causes light to pierce fog and mist without "back-glare." This is due to the Noviol Glass **(patented)** of which the Conaphore is made. There are practically no blue and violet rays in the Noviol beam. Thus the small fog particles cannot diffuse the light into a hazy blur.

**Pierces clouds of dust**—The car ahead is raising huge clouds of dust. The car equipped with Conaphores never has to slacken speed. Note how the Noviol beam penetrates the dust, while the light from the ordinary headlight is diffused into a dangerous "back-glare."

***Manufactured by the World's Largest Makers of Technical Glass***

**CONAPHORE**

**Pierces Fog and Dust—No Glare—
Range 500 feet**

Dealers handling Conaphores are being backed by the strongest advertising campaign ever put behind an automobile headlight glass. The demand for Conaphores in 1918 is sure to be a record breaker.

Investigate the Conaphore proposition now—then get your orders on your jobbers' books as quickly as possible, to insure prompt delivery. Write your jobber or direct to us for full particulars.

**Jobbers**—Get in touch with us for full information on the Conaphore proposition.

| Retail Price List (Per Pair) | Noviol Glass | Clear Glass |
|---|---|---|
| 5 to 6⅞ inches incl | $2.40 | $1.60 |
| 7 to 8½ inches incl | 3.50 | 2.50 |
| 8⅝ to 10 inches incl | 4.50 | 3.00 |
| 10⅛ to 11½ inches incl | 6.00 | 4.00 |

Prices 25 cents more per pair west of Rocky Mountains. Sizes vary by steps of ⅛-inch above 6½-inch size.

**CONAPHORE SALES DIVISION**
**Edward A. Cassidy Co., Inc., Managers**
**Madison Ave., and 40th St., N. Y. C.**
**CORNING GLASS WORKS**

# PISTONS FOR THE FORD

## REGULAR WEIGHT

**Made of a close-grained grey-iron.**

—

**Grinding Finish**

**Complete with Rings, Pins and Bushings**

***Manufactured in Both Standard and Several Oversizes.***

***With or Without Bushings***

***Fitted with LAP JOINT Rings—a decided advantage over the diagonal cut usually furnished.***

**PRICE TO GARAGES AND DEALERS, $1.25 COMPLETE**

**When fitted with one TAYLOR RING on each piston $6.33 per set.**

## TAYLOR RINGS for FORDS

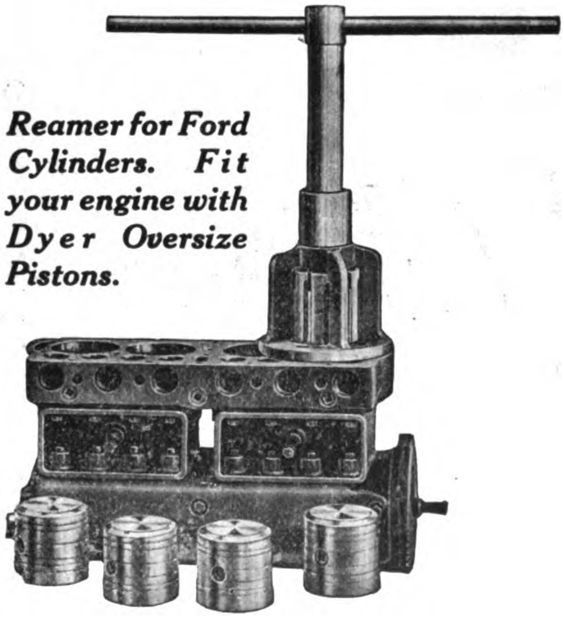
***In Standard and Oversizes***

A strong absolutely round, one-piece ring, carefully machined and ground to size. An eccentric ring with a joint which is actually leak-proof, compression-tight and which is designed to compensate for wear and yet be gas-tight and oil-tight when the joint is open 1-8 of an inch.

***STOPS*** Loss of Compression, Oil Throwing, Carbon Troubles.

***GIVES*** More Miles on Gas and Oil. Strong Continuous Service From the Motor.

It is impossible for carbon to collect and force open the joint of the Taylor Ring which bears and wears uniformly at all points on the cylinder wall.



*Reamer for Ford Cylinders. Fit your engine with Dyer Oversize Pistons.*

## SPECIAL LIGHT WEIGHT

**ONE Pound lighter than the Standard Ford Piston**

**Will not vary in weight more than TWO OUNCES**

**REDUCES BY FOUR POUNDS THE WEIGHT OF RECIPROCATING PARTS**

Possesses all the advantageous features of alloy and aluminum pistons without their bad features, such as slapping, oil throwing, seizing and poor compression.

This piston is tough, durable, absolutely round, perfectly machined, has domed head, uniform walls, special oiling features and is accurately fitted with special lap joint rings.

**DECREASES** the crank shaft, wrist pin, connecting rod, piston and cylinder wear!

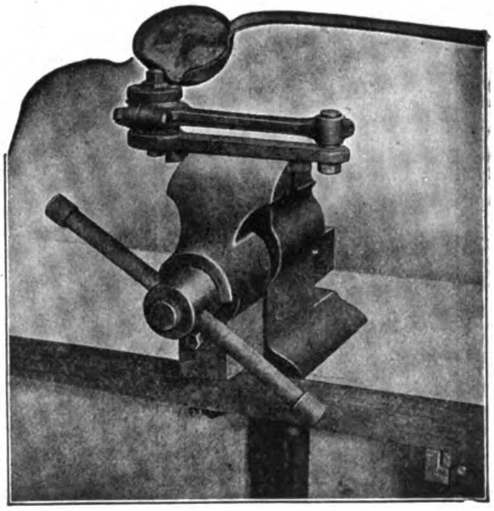
**INCREASES** the speed!

**INCREASES** the acceleration!

**DECREASES** the vibration of the car; the gasoline and oil consumption!

**DECREASES** the chances of a knock in the motor!

## REBABBITTING JIG



**For Ford Connecting Rod Bearings**

**WILL PAY FOR ITSELF IN THE FIRST JOB OR TWO**

**THE G. H. DYER CO., - - Cambridge, Mass.**

# CARBORUNDUM VALVE GRINDING COMPOUND

FINE
CARBORUNDUM
VALVE GRINDING COMPOUND
THE CARBORUNDUM COMPANY
NIAGARA FALLS, N.Y.

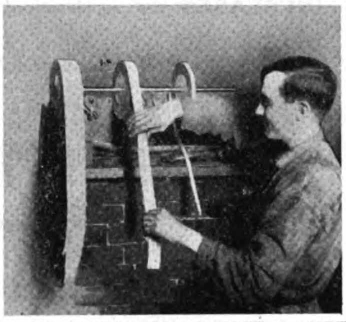
COARSE
CARBORUNDUM
VALVE GRINDING COMPOUND
THE CARBORUNDUM COMPANY
NIAGARA FALLS, N.Y.

A quick, clean-cutting compound that lightens the work of valve grinding—leaves a true, unscored valve seat—saves time—saves effort. It's a mixture of Carborundum—the hardest, sharpest, fastest cutting of all materials—with a high-grade grease.

**Carborundum Compound Cuts**

Put up in one- and five-pound tins and handy combination cans.

*Send for free sample*



**Aloxite Cloth**

A clean-cutting cloth that cuts faster, lasts longer, does better work than the ordinary "emery" cloth. Coated with Aloxite—harder, sharper, tougher than emery.

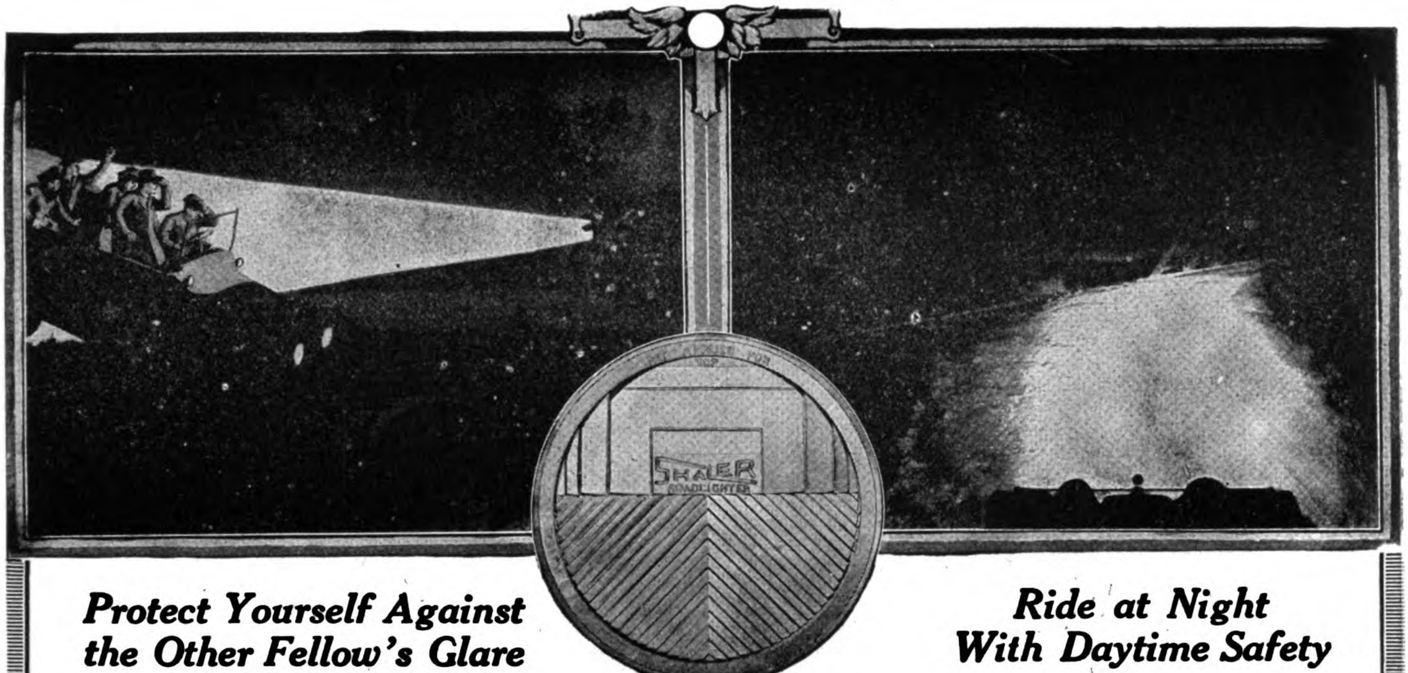
Get Aloxite Cloth in fifty-yard Economy Rolls—six widths—in any standard grit.

**Carborundum Grinders**

Handy, serviceable machines for grinding any of the edge tools of the garage.—Every machine fitted with genuine Carborundum wheels. The No. 4 Niagara Grinder or the No. 28, double wheel, grinder stand recommended for general garage work.

*Send for circular on Carborundum Products for the Garage*

**THE CARBORUNDUM COMPANY**
NIAGARA FALLS, N. Y.



## *Protect Yourself Against the Other Fellow's Glare*

The danger of night driving is banished because the other fellow's glare can't blind you and your light doesn't bother him, because you have light from fence to fence if your car is equipped with SHALER Roadlighters; and because you have ample distance light to allow you to drive at daylight speed with confidence that obstacles, turns, etc., will be revealed in time for you to avoid them.

## *Ride at Night With Daytime Safety*

In addition to distance light, superior to that from a headlight with a clear glass front, the SHALER Roadlighter throws concentrated beams on the edges of the road, such as could only be obtained by using a spotlight on each side of the car. This beam, composed of light rays that are usually wasted in the treetops, is so strong that it counteracts the glare from approaching headlights and enables one to keep a clear view of the edges of the road while meeting and passing.

# SHALER ROADLIGHTER

*Pierces the Glare of Approaching Headlights*
*Illuminates the Ditches*
*Accurate Focusing Unnecessary*
*Easy to Keep Clean*

Every day the newspapers are full of reports of accidents caused by *unsafe headlights.*

Your safety and perhaps the very lives of yourself, your family, and other motorists depend absolutely upon the efficiency of your headlights.

*Shoots the Light Far Ahead*
*Legal Everywhere*
*Rays Penetrate Fog and Dust*
*Easy to Install*

To make driving at night *safe,* you need more than an ordinary headlight that lights only part of the road.

Why deliberately risk your life with poor headlights or dimmers that shut off your light just when you need it most?

## Limited Offer to Dealers Only

We want every automobile accessory dealer in the United States to try out a pair of SHALER Roadlighters on his own car—*at our expense.*

Mail the coupon for full particulars regarding this big offer. There is no obligation—don't put it off—clip and mail coupon *now.*

**C. A. Shaler Company**
**9251 Fourth Street** **Waupun, Wis.**

## Dealers' Offer Coupon

**C. A. SHALER CO., 9251 Fourth St., Waupun, Wis.**

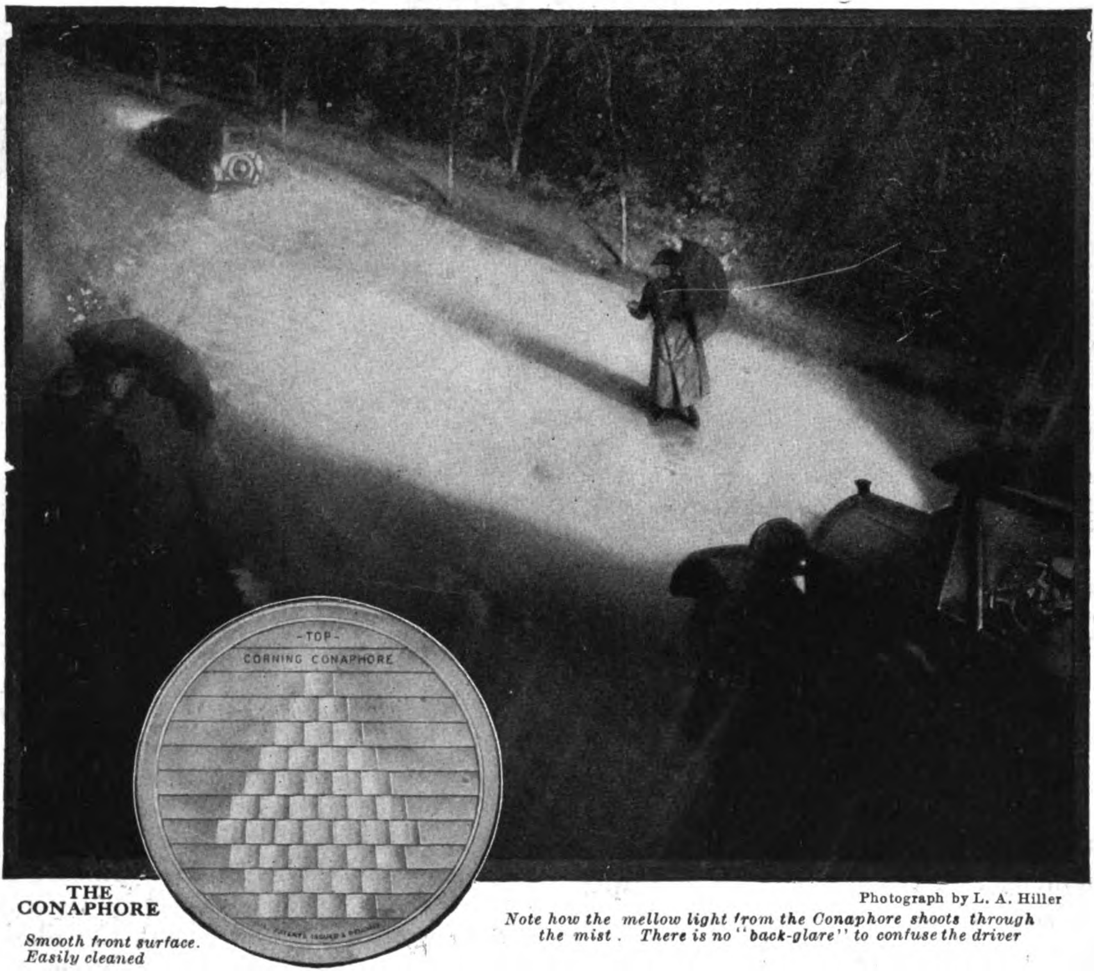
**Gentlemen: Send me full particulars about your offer to let dealers try out a pair of SHALER Roadlighters at your expense. This obligates me in no way.**

*Name*..............................................................

*Address*..............................................................

*City and State*..............................................................

*My Jobber's Name Is*..............................................................



**THE CONAPHORE**

*Smooth front surface. Easily cleaned*

Photograph by L. A. Hiller

*Note how the mellow light from the Conaphore shoots through the mist. There is no "back-glare" to confuse the driver*

# Get your share of early Spring business

## *Strong April demand for Conaphores means extra profits for the trade*

The Noviol Conaphore is the only automobile headlight glass that shoots a powerful beam of light through rain and mist without "back-glare."

National Conaphore advertising is driving home this exclusive feature to motorists. This means a big demand for Noviol Conaphores during the wet, foggy season of early Spring.

The Noviol Conaphore gives new comfort and safety to night driving under adverse weather conditions, and motorists are quick to appreciate the fact—just as they appreciate the 500 ft. range and no-glare features of this remarkable headlight glass.

### How the beam penetrates

Moisture particles in the air easily diffuse the blue and violet rays present in all ordinary white light. This is the chief cause of the dangerous "back-glare" which blurs the driver's vision.

Noviol Conaphores correct this dangerous condition. The yellow-tint Noviol Glass (patented) absorbs the blue and violet rays, but projects all the rest of the light. Thus the diffused "back-glare" is done away with, and danger is eliminated.

### Keeps light within legal limits

The Conaphore entirely overcomes the menace of glare. It uses all the light but controls it within the law's requirements.

Patented corrugations on the inner surface bend down the light rays and shoot them along the road. Cylinders fan the light sidewise. This provides a 500 ft. range with ample side illumination. As the height of the beam is never more than 42 inches, there is no chance of blinding approaching motorists and pedestrians. Thus the Conaphore gives maximum range, and at the same time kills all glare.

### Made also in clear glass

For those who prefer, the Conaphore is made in clear glass. Clear glass Conaphores give 500 ft. range and eliminate glare, but do not pierce rain and fog. We strongly recommend the Noviol.

### Easy to install

You will have no difficulty in installing Conaphores for your customers. Simply take out the old headlight glass and put the Conaphore in its place, smooth side out. Sizes made to fit all cars.

**Dealers**—Prepare now to handle the Spring demand for Conaphores in your territory. Get in touch with your jobber at once, and take the early season profits as well as the later ones.

**Jobbers**—Write us for full particulars on the Conaphore—***now***, before the motoring season gets fully under way.

| Retail Price List (Per Pair) | Noviol Glass | Clear Glass |
|---|---|---|
| 5 to 6⅞ inches incl. | $2.40 | $1.60 |
| 7 to 8½ inches incl. | 3.50 | 2.50 |
| 8⅝ to 10 inches incl. | 4.50 | 3.00 |
| 10⅛ to 11½ inches incl. | 6.00 | 4.00 |

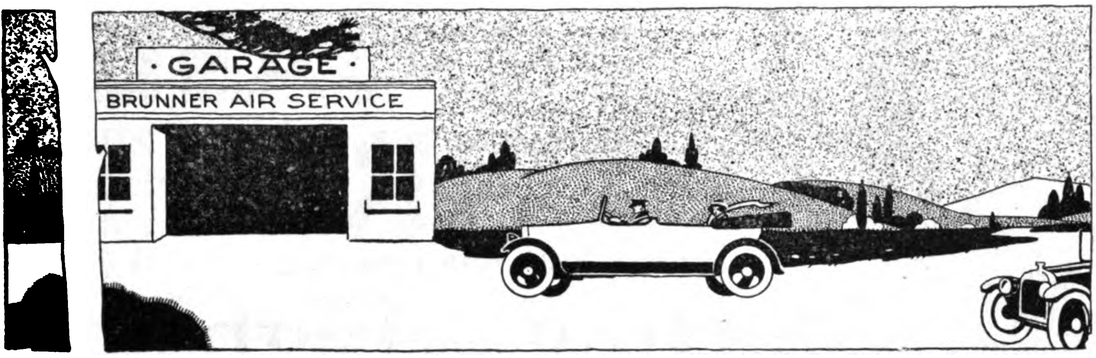
Prices 25 cents more per pair west of Rocky Mountains. Sizes vary by steps of ⅛-inch above 6½-inch size.

*Manufactured by the World's Largest Makers of Technical Glass*

**CONAPHORE**

**Pierces Fog and Dust—No Glare—Range 500 feet**

CONAPHORE SALES DIVISION
EDWARD A. CASSIDY CO., Mgrs.
Madison Avenue and 40th Street, New York City
CORNING GLASS WORKS



# Are You Prepared for the Big Spring Drive?

**It is only a matter of a few weeks now, Mr. Garageman, when the roads will be alive with motorists eager for service, and the most important service in the early Spring is your Compressed Air Service.**

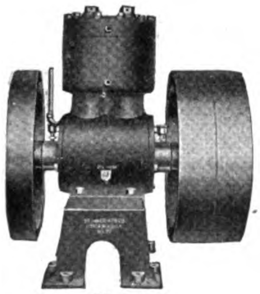
**No. 66**

## When "Last Summer" Tires Begin to Blow

**In the early Spring, when the boys are trying to coax more mileage out of their "last summer" tires—then is the time your compressed air supply is taxed to the utmost and—then is the time you should be in position to make a favorable impression on the motorist by having your air supply ready to meet his demands.**

**No. 50**

## Is Your Compressed Air Service Going to Pass Muster This Spring?


**No. 17**

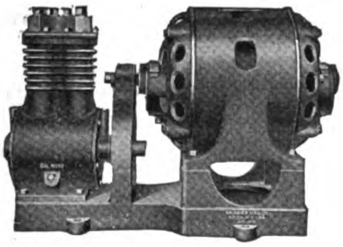
**This is a question which should be most carefully considered by you just now, Mr. Garageman, because if you do not show the motorists that you are able to deliver the goods this spring you are not going to make an impression such as will guarantee his return to your garage for service and supplies during the long summer months that are to follow—**

**No. 542**

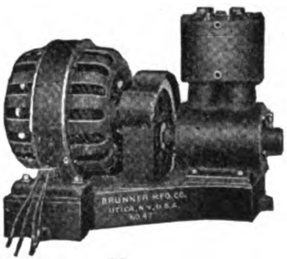
### THESE ARE DAYS OF PREPAREDNESS

**And those among you who prepare for the big Spring drive will taste the fruits of victory—the best way to prepare is to install a Brunner Air Compressor in your Garage.**

## INVESTIGATE THE BRUNNER AIR COMPRESSOR


**No. 42**

**The Brunner is the pioneer of all Garage Air Compressors—it has been making good in the garage ever since the garage business has been a business—the Brunner Air Compressor is properly designed and built to suit the garageman's special requirements. No freakish attachments and no restriction of the lubrication to invite disaster but simply the same good substantial business proposition it has always been for the garageman who progresses with the times.**


**No. 47**

***Our new No. 15 Catalogue is the most complete and comprehensive book of its kind ever published. We will be glad to send you the catalogue and the name of the Brunner Jobber who covers your territory.***

## BRUNNER MANUFACTURING COMPANY

**Main Office and Plant:**
**UTICA, N. Y.**

**Cincinnati Branch:**
**CINCINNATI, OHIO**

***"The Motorist Who is Brunnerwise—Knows Brunner Service Satisfies."***

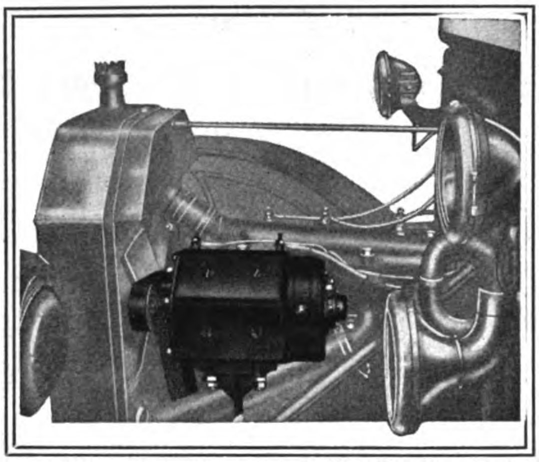
THE Dyneto

**FORD**

Single-Unit Electric

**Starting and Lighting System**

**Type A for 1917-18 Cars**
**Type B for earlier models**



Dependable
Winter and
Summer

Simple
Durable
Efficient

**Outfit Complete, Ready to Install**

**$85.00**

**F. O. B. Syracuse, N. Y.**

| | |
|---|---|
| ***Quality*** | **The same high standard of workmanship and material which has characterized the outfits we furnish for the Franklin, Holmes, Elcar, Crow-Elkhart, Dixie and numerous others.** |
| ***Power*** | **It actually assists rather than robs the engine of power.** |
| ***Non-Stalling Feature*** | **Your engine cannot stall in congested traffic or at hazardous points, such as car crossings. The Dyneto automatically turns from a motor to a generator and back to a motor as car speed changes.** |
| ***Guarantee*** | **To anyone doubtful regarding the efficiency of our equipment we will agree to furnish one outfit subject to return for credit within 10 days if not found satisfactory, providing it is in the same condition as when shipped and transportation charges are prepaid.** |

ANNOUNCEMENT

In addition to the famous Dyneto Type "B" Single Unit outfit, the new Type "A" equipment especially designed for the 1917-18 Ford cars will be ready for distribution May 1st. This outfit includes several new features, such as cowl panel, tail lamp, large gear reduction, permitting charging of the battery at low speed, improved attaching bracket, etc. Either Type "A" or Type "B" outfit shipped complete with battery, switches, wires, etc., upon receipt of $85.00. When ordering send draft or money order. Send today.

***Dealers: Wire for our agents' proposition***

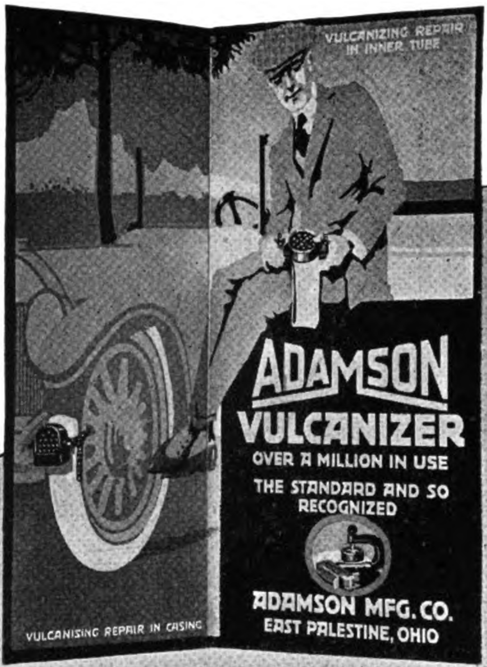
**DYNETO ELECTRIC CORPORATION**
**SYRACUSE, N. Y.**

# DEALERS:

**THIS year Motorists *must save* on their tires. Profit by this! Sell them the famous Adamson Vulcanizers to repair their own tubes and casings quickly, permanently and *cheaply*.**

**Adamsons sell fast because everybody knows they are: Easy to operate, Sure in their work, Use common gasoline, and cost least to buy and operate.**

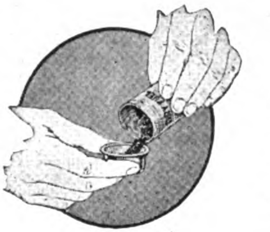
***Write us for these Displays and other Adamson Dealer Helps—FREE***


VULCANIZING REPAIR IN INNER TUBE
ADAMSON
VULCANIZER
OVER A MILLION IN USE
THE STANDARD AND SO RECOGNIZED
ADAMSON MFG. CO.
EAST PALESTINE, OHIO
VULCANISING REPAIR IN CASING

# ADAMSON

## VULCANIZERS

*The Big Sellers for 1918*

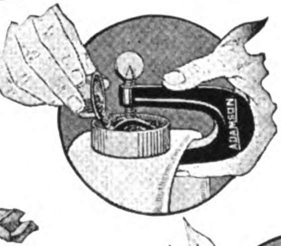


MODEL "E" 5-MINUTE VULCANIZER

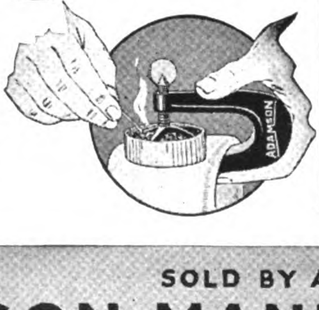
It takes just five minutes—on the road or at home—to repair a tube puncture *permanently* with this light and handy Vulcanizer. Use Adamson Dry Fuel or common Gasoline.

Empty a measure of Dry Fuel into the Model "E"—

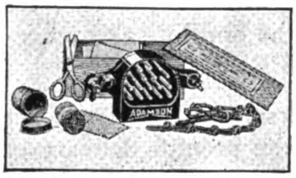
DRY FUEL
ADAMSON



Touch a match and the Fuel burns with a hot glow—no flame. Gasoline can be used instead of Dry Fuel if desired.

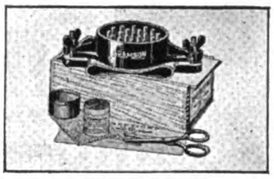


Complete outfit includes Vulcanizer, 12 Patches, can of Dry Fuel, Measuring Cup and Directions. Extra box of 12 Patches, 25¢; Extra can of Dry Fuel, 50¢. $1.00



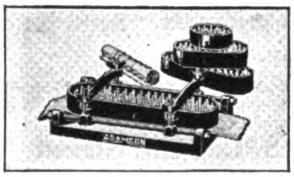
MODEL "U" $2.00

Complete outfit for repairing tubes and cases. Mends tread cuts; prevents water from getting into the fabric; keeps tires in condition; doubles the mileage.



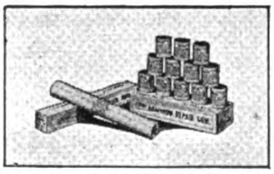
MODEL "T"

Complete outfit for repairing inner tubes only. $1.50



MODEL "S"

Complete outfit for private garages and repair shops. Mends tubes and casings. $12



ADAMSON REPAIR GUM

Essential for best results with any portable vulcanizer. Perfect adhesion without use of cement.

SOLD BY ALL JOBBERS

**ADAMSON MANUFACTURING CO.**

EAST PALESTINE, OHIO.

Garage Owners
Service Station
and
Supply Men

Spring Is In
The Air
It's Time
To Repair

# Use Universal Battery Service and Make Big Profits

The spring drive is on! You will soon be rushed to the limit with repair work. Be ready to render prompt and efficient service. Look after your batteries, battery plates and parts—and do it now. Be prepared!

## Universal Battery Service

means complete service—perfect service. No longer is it necessary for you to deal with a dozen different makers. You can now turn your battery needs over to the Universal Battery Company with the absolute assurance that you can depend on our service IN EVERY DETAIL.

Universal Battery "Parts Service" has solved your biggest problem—the prompt delivery of all parts needed for replacements and repairs, such as plates, terminals, connectors, separators, etc. We make and carry in stock complete batteries and also plates and parts for every battery for which there is a popular demand.

Let us show you how we can save you money, time and trouble. A postcard will bring our interesting and instructive catalogue to you promptly. Send for the catalogue and also our price list —today.

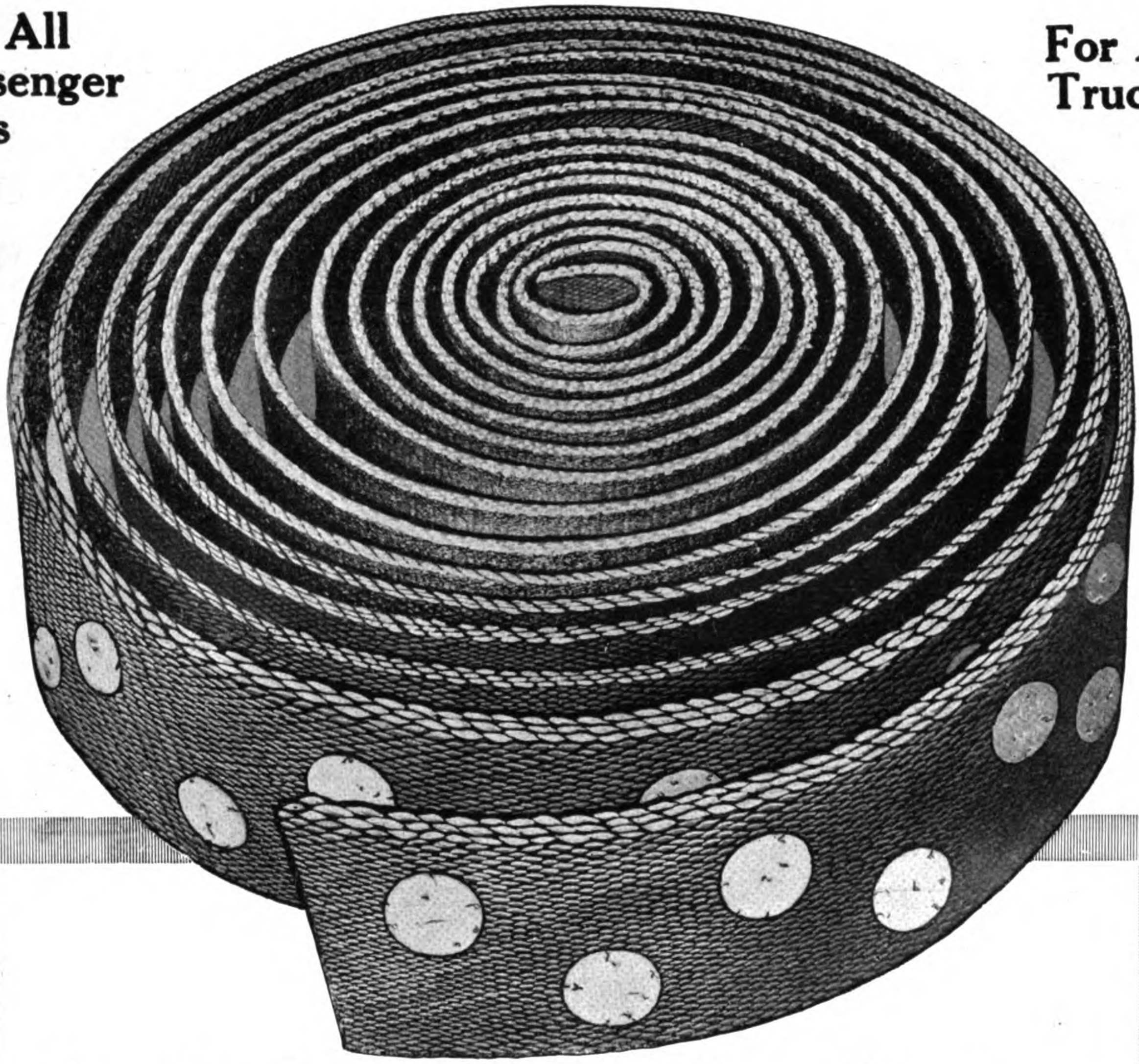
**UNIVERSAL BATTERY CO.**

**3420 S. LaSalle Street** **Chicago, Ill.**

"Makers of Universal Starting and Lighting Batteries. A complete battery for every popular make of car and a repair part for every standard make of battery. They are also manufacturers of vehicle plates and parts for both pleasure and commercial cars."

**For All Passenger Cars**

**For All Trucks**



# Cork Insert Brake Lining

## gives a SURE brake ALL the time

### 3 Big Points of Superiority

**1 Less pressure required on pedal**

Cork Insert Brake Lining has by far the highest co-efficient of friction of any lining. It *takes hold* firmly at the slightest touch of the toe to the brake pedal. Less pressure means less heat, longer wear, more positive service.

**2 Unaffected by oil or grease**

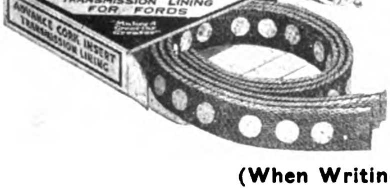
Oil on ordinary lining, destroys its ability to *hold.* Makes it undependable and dangerous. Cork Insert Brake Lining is not affected by oil or grease. It is always *dependable*—always can be relied on to *take hold* instantly—positively.

**3 No grab, slip or SQUEAK**

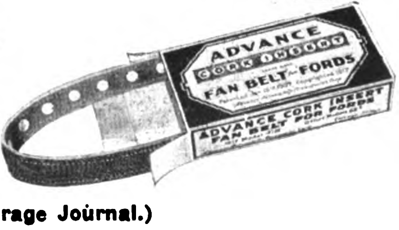
Cork Insert Lining never glazes over or gets slippery—insures freedom from grabbing and slipping. Both corks and lining wear very slowly. It gives a longer service than any other lining and holds its high frictional qualities and original efficiency to the last mile.

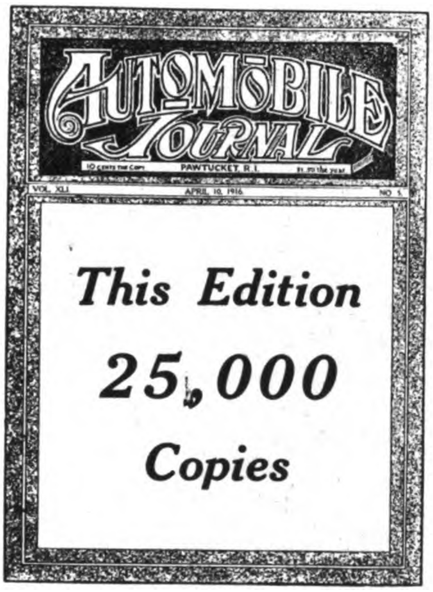
**DEALERS!** Here's another big money maker for you. The success of Cork Insert Transmission Linings and Fan Belts for Fords is being repeated *in an even bigger way* in Cork Insert Brake Lining. It is handled by the same jobbers who handle the other Cork Insert products. Get this lining in stock for it is *going big.*

**ADVANCE AUTOMOBILE ACCESSORIES CORP.**
**Dept. C-3 56 E. Randolph St., Chicago, Ill.**



Makers also of
Cork Insert Transmission Linings for Fords and Fan Belts for Fords





*This Edition*
*25,000*
*Copies*

# Annual Overhaul Review

# AUTOMOBILE JOURNAL

## May 10th Issue

***The List of Cars and Equipment Dealt With Follows:***

- **Picking the Used Car**
- **Ford, Model T**
- **Chevrolet 4-90**
- **Overland 79**
- **Maxwell, 1916-17**
- **Studebaker 4's and 6's**
- **Dodge**
- **Cadillac 1916-17-18**
- **Hupmobile 1916-17-18**
- **General Engine Overhaul**
- **Packard Twin Six**
- **Reo**
- **General Chassis Overhaul**
- **Oldsmobile, 44-45**
- **Chalmers**
- **Franklin Series 8**
- **Saxon**
- **Buick**
- **Chandler**
- **Paige-Detroit**
- **Hudson Super-Six**

The most comprehensive presentation of information dealing with the overhaul and restoration of models of popular passenger cars ever compiled.

Every article complete, detailing with the mechanical attention necessary to make these machines thoroughly efficient and dependably serviceable.

All suggestions have been approved by practical men. A number of the greatest value to OWNERS of used cars, DEALERS and REPAIRERS.

This edition will be a wonderful medium for publicity for the manufacturers of parts and equipment included in or that may be utilized with the cars specified. The obvious reasons for specific advertising in this number cannot be too strongly emphasized.

It will be the opportunity of the year.

Reserve space by wire or letter. This will insure representation.

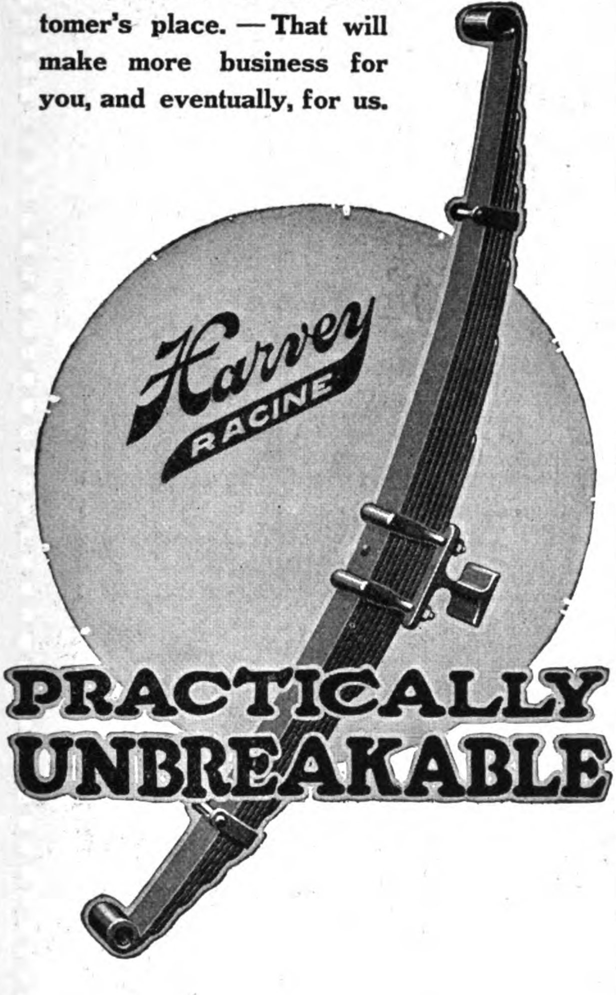
Last form closes May 5.

**AUTOMOBILE JOURNAL**

**Times Building** **Pawtucket, R. I.**

# Sell The Spring You Would Use On Your Own Car

**Put yourself in the customer's place. —That will make more business for you, and eventually, for us.**



**THERE'S A HARVEY JOBBER NEAR YOU**

**Our new catalogue giving Complete measurements of over 900 Styles of Springs is yours on request**

**HARVEY SPRING**
**& FORGING CO.**
**915-17th Street RACINE, WIS.**

---

Removing

**Showing Lawco being used on Kelsey Rim. Tool placed inside. Lifting on lever expands rim sufficiently to unlatch dovetailed lock. Used in same manner on Detroit rim.**

# Just One Minute

**To Remove Tire From Rim With**

**THE**
## LAWCO
## RIM TOOL

Just three simple movements—breaking, contracting and latching—and your tire is free from any demountable transversely split rim in **less than a minute.**

The Lawco Rim Tool gives results quick as a monkey wrench. Its claws are hooked over the rim and contracted by a simple motion of the lever. The lever locks the tool automatically and holds the contraction. This leaves both hands free to remove tire. Having been repaired, tire can be put back on while the rim is still in the grip of the tool.

To latch rim at the split, tool is placed inside rim. It will fit inside because one arm has a self-adjusting claw capable of shortening the radius of the arm. A reverse movement of the lever expands the tool and rim as much as is necessary to permit latching of the ends.

The Lawco Rim Tool can be used on more than 50 types of rims. It works faster than tools costing $50. Made of forged steel, simple and strong, it is practically indestructible. Used according to directions it cannot injure a rim, tire or valve stem. Dead easy to attach and adjust. Weighs but 5½ pounds, yet replaces tools weighing as much as 300 pounds. Collapsible.

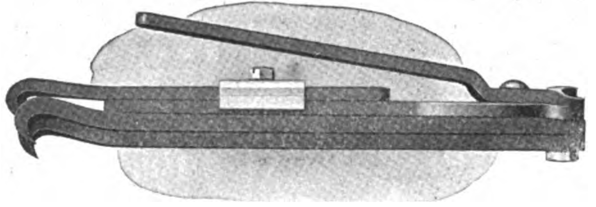
Price, $3.50.

Replacing

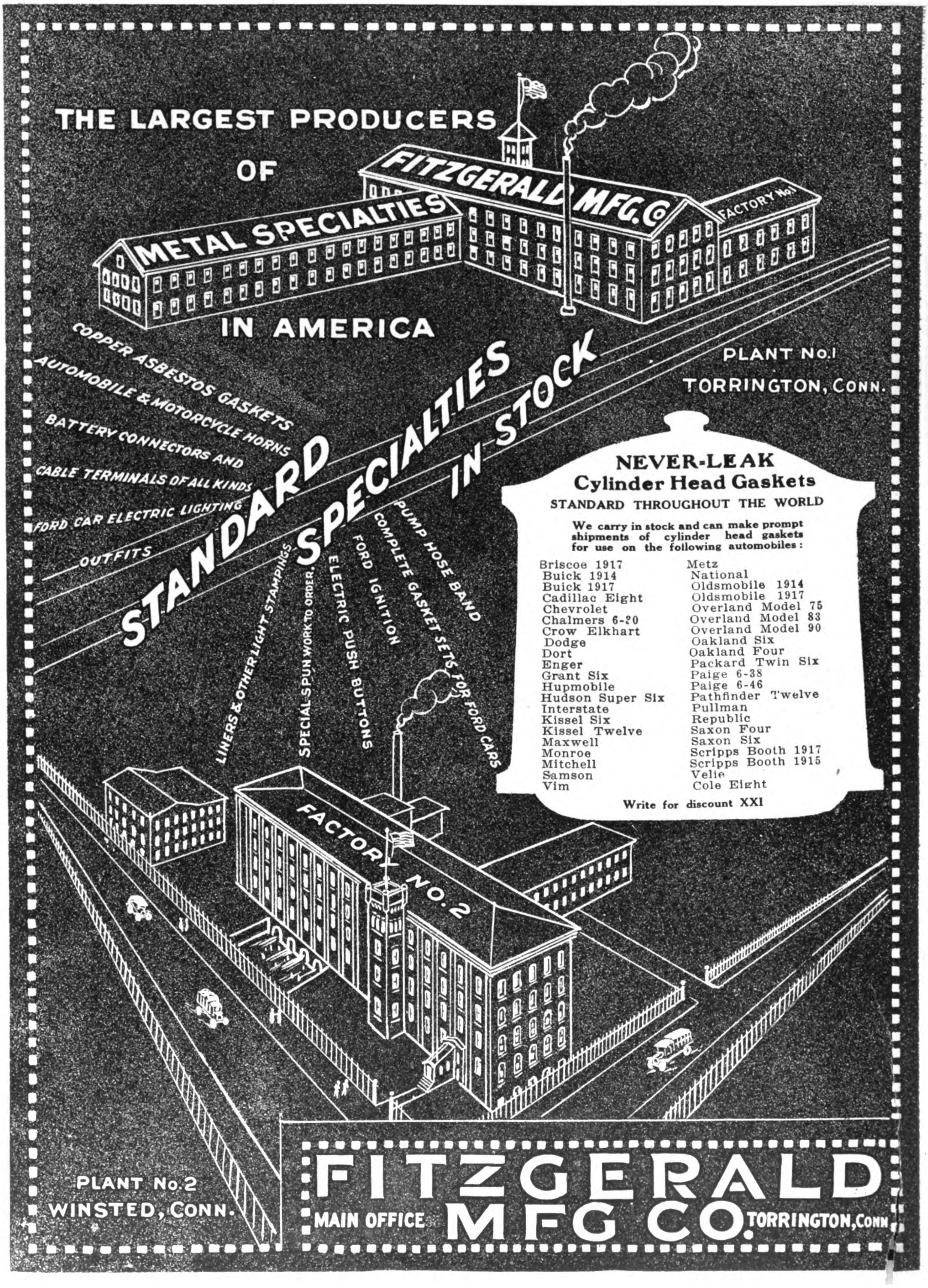
**Effect produced by hooking adjustable claw on the side opposite from the other two claws. Causes rim to contract in a helical form without either end in any way disturbing the valve stem. This also makes it very easy to slip rim out and in.**

*Get the LAWCO from your Dealer*
*If he can't supply you, write us.*

**THE F. H. LAWSON CO., Dept. G, Cincinnati, Ohio.**



**Closes like a jack knife to go in tool box.**



THE LARGEST PRODUCERS
OF
METAL SPECIALTIES
IN AMERICA
FITZGERALD MFG. Co
FACTORY No. 1
PLANT No. 1
TORRINGTON, CONN.
COPPER ASBESTOS GASKETS
AUTOMOBILE & MOTORCYCLE HORNS
BATTERY CONNECTORS AND
CABLE TERMINALS OF ALL KINDS
FORD CAR ELECTRIC LIGHTING
OUTFITS
STANDARD SPECIALTIES IN STOCK
LINERS & OTHER LIGHT STAMPINGS
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ELECTRIC PUSH BUTTONS
FORD IGNITION
COMPLETE GASKET SETS FOR FORD CARS
PUMP HOSE BAND
FACTORY No. 2
PLANT No. 2
WINSTED, CONN.

**NEVER-LEAK**
**Cylinder Head Gaskets**
STANDARD THROUGHOUT THE WORLD

We carry in stock and can make prompt shipments of cylinder head gaskets for use on the following automobiles:

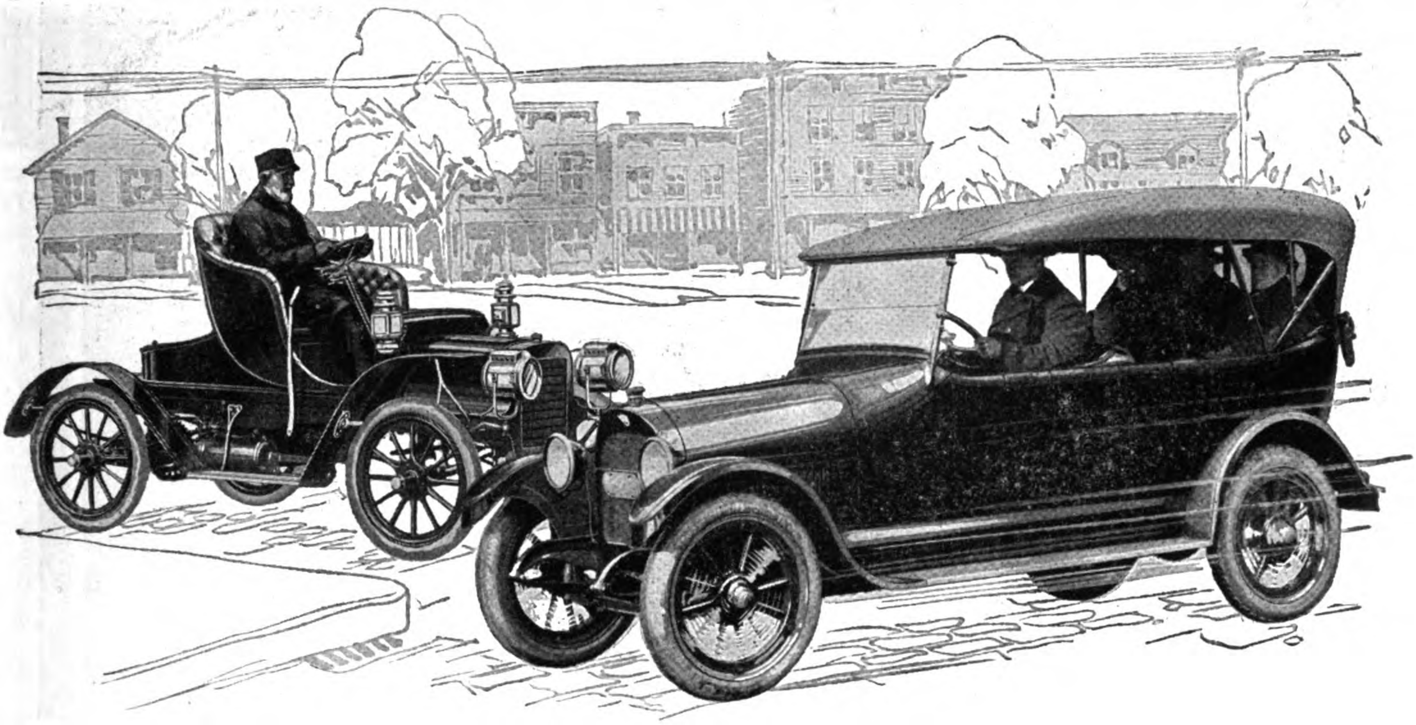
Briscoe 1917
Buick 1914
Buick 1917
Cadillac Eight
Chevrolet
Chalmers 6-20
Crow Elkhart
Dodge
Dort
Enger
Grant Six
Hupmobile
Hudson Super Six
Interstate
Kissel Six
Kissel Twelve
Maxwell
Monroe
Mitchell
Samson
Vim
Metz
National
Oldsmobile 1914
Oldsmobile 1917
Overland Model 75
Overland Model 83
Overland Model 90
Oakland Six
Oakland Four
Packard Twin Six
Paige 6-38
Paige 6-46
Pathfinder Twelve
Pullman
Republic
Saxon Four
Saxon Six
Scripps Booth 1917
Scripps Booth 1915
Velie
Cole Eight

Write for discount XXI

**FITZGERALD MFG CO.**
MAIN OFFICE TORRINGTON, CONN.

(When Writing to Advertisers, Please Mention the Accessory and Garage Journal.)

# Bearings Service for *Any* Car



# From the *Oldest* to the *Newest*

Can you remember the Globe Car, the Sphinx Car, the Dragon, the Chalfant, or the Great Smith?

Probably not. Yet, if an owner of one of these cars, or many others whose names have passed into oblivion should ask us for bearings service, we would be ready to supply his needs intelligently and immediately.

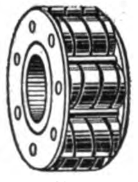
**Manufacturers of Timken, Hyatt and New Departure bearings have provided us, their official national service representatives, with complete and authentic engineering data. With this unique information and with the complete stocks of these bearings on hand in all of our twenty-two branches, we are able to supply the bearing requirements of practically any make of motor car, motor truck or tractor.**

**In addition to our twenty-two direct branches situated in the most important automobile centers of America, there are several hundred agents representing us in smaller cities and towns. These agents are equipped to give you expert advice and supply bearings for repair and replacements in a prompt and reliable manner.**

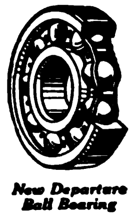
*Branches In All Principal Cities*

**New York**
**Detroit**
**Chicago**
**Boston**
**San Francisco**
**Los Angeles**
**Atlanta**
**Seattle**
**Minneapolis**
**Kansas City**
**Dallas**
**Cleveland**
**Denver**
**Indianapolis**
**Rochester**
**Philadelphia**
**St. Louis**
**New Orleans**
**Omaha**
**Pittsburg**
**Portland, Ore.**
**Toronto, Can.**

*Timken Roller Bearing*



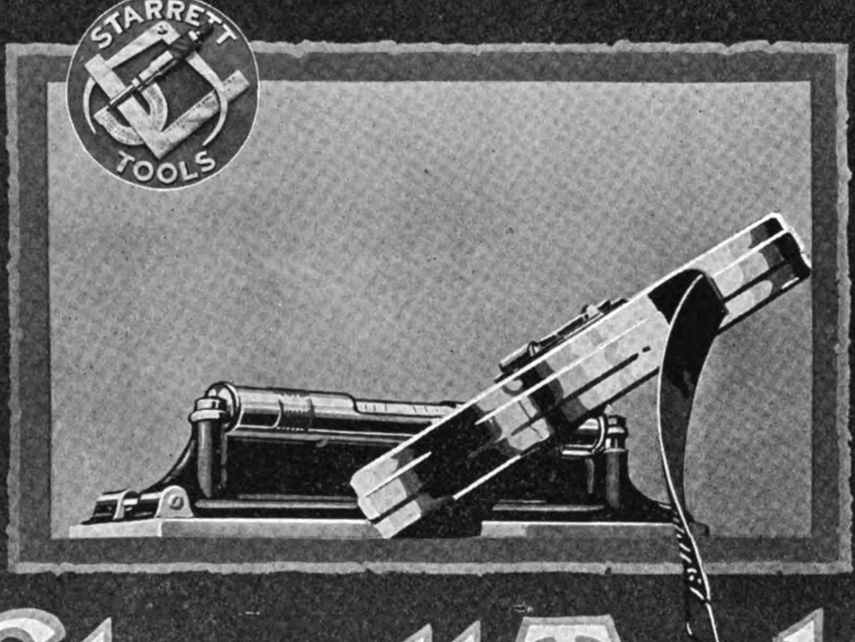
*Hyatt Roller Bearing*



*New Departure Ball Bearing*

# BEARINGS SERVICE COMPANY

GENERAL OFFICES: DETROIT, MICH.


STARRETT
TOOLS

# Starrett Tools

## Assurance of Accuracy

Perfect confidence in the accuracy of a rule, tape or level, is vital. Such assurance comes through the name Starrett and the knowledge that every tool bearing that name is warranted.

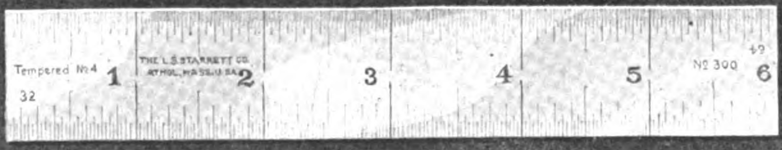
A wide variety of styles and sizes of tools are described in Catalog No. 21-GT, which is sent free on request.

**The L. S. Starrett Co.**

The World's Greatest Toolmakers

ATHOL, MASS.

NEW YORK LONDON CHICAGO 42-763


Tempered No4
32
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THE L.S.STARRETT CO ATHOL, MASS.U.S.A.
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No 300
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The ACCESSORY and GARAGE JOURNAL
Devoted Exclusively to the Automobile Trade and Allied Interests.

VOL. VII. PAWTUCKET, R. I., MARCH, 1918 No. 11

# New Records Established at the Boston Show

## Orders Contracts and Retail Transactions Consumated During Week Totalled Over $10,000,000—Thousands of Dealers in Attendance—Great Industrial Activity and Prosperity in New England Reflected

THE Boston Automobile Show, held during the first week of the present month, established some records that not only reflect the great prosperity throughout New England, but also a spirit of activity and progressiveness that should set at rest any doubts as to the tendency of business for the coming season.

It was the greatest business show ever held, orders, contracts and retail transactions totaling approximately $10,000,000 during the week. Over 225,000 people attended, which number while not a record, indicated the keen interest shown in the new models and equipment and revealed the fact that in view of the heavy sales there were very few persons who could be classed in the merely curious element, which in years past constituted a considerable proportion of the total attendance at the average motor car show.

There were about 4000 New England dealers in attendance and taken as a whole they placed orders on a larger and more extensive scale than ever before. Probably the most significant fact brought out was that of the general recognition among dealers that the coming year will be the greatest in history for commercial cars, including as well as trucks the various truck making units and attachments. Many of the Boston dealers who heretofore have confined their lines exclusively to passenger cars have taken on agencies for commercial cars and truck attachmnts. The great industrial activity throughout New England reveals an expanding market for all forms of commercial units, and this business is the most natural one for the dealers to go after both as an avenue of new enterprise, as well as a means of maintaining their organizations in the face of a material curtailment in passenger car production.

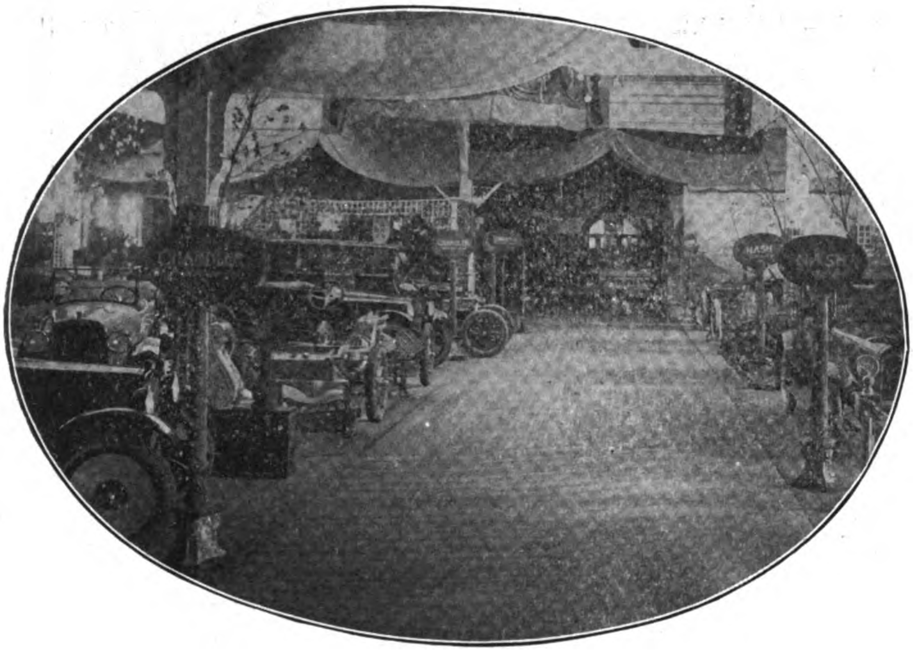
LEDER MFG. CO.
Bethlehem Spark Plugs

View Through Main Aisle in the Big Accessories Department, Showing Extensive and Elaborate Display of the Joseph Dixon Crucible Co. Lubricants at Left.

The new little Overland model, which is not yet in production, and the Holmes car, were practically the only entirely new models exhibited at the show. These two cars, which were at the New York show, attracted great interest. The Overland, which has a unique spring suspension system, derived its popularity from this fact, as well as announcement that when marketed it would sell at a figure under $500 and be a big competitor of the Ford. The Holmes car has an air cooled motor and is a new one in the "air-cooled" field, which was formerly occupied exclusively by the Franklin.

Taken as a whole, however, the show indicated a quite general policy on the part of manufacturers to continue the fundamental chassis and body designs of the past year, but with extensive refinements of a minor nature, most of which are of a character that can be purchased, as equipment, and installed on the present models. It was also noticeable that many of the newly adopted features were a result of the war conditions, and that others reflected the development of motor design in the European theatres of battle. On the majority of engines there is found some type of device for increasing their efficiency, either by obtaining more economical gasoline consumption or through regulation of the carburetors and cooling system.

Steel disc wheels, which were shown on many different makes and models, were the most conspicuous of the various show features, and it was the consensus of opinion that this type will enjoy great popularity both among car owners as well as operators of commer-



**A Main Aisle in the Passenger Car Department, with a Good Example of Contrast in the New Disc Wheel and Old Type.**

cial vehicles. Many points of superiority are claimed for the steel disc type of wheel besides that which brought them into use on military vehicles. Both the English and French transport officials approved the wheels because they were less susceptible to injury from rifle fire and sharpnel and endured the elements better than the wooden product. They can be readily cleaned and will not loosen up or warp, while they also lend to a car the appearance of cleaner design and greater service.

A very optimistic echo also came from the various meetings and get-together gatherings held among the trade during show week. Unrestricted expressions of confidence and optimism were heard from the lips of some of the best known motor car and accessory men in the trade, while the local spirit indicated that dealers throughout New England were looking ahead for the greatest season in history, despite the curtailment of car production and the possibilities of being unable to procure prompt deliveries. These facts are particularly significant, coming as they do from the Boston trade, as it is made up of probably the largest number of men who have not only been eminently successful, but pioneers, than any other body of men in the same business in the industry.

## STUDEBAKER STOCKHOLDERS ASK QUESTIONS AT MEETING.

Shareholders of the Studebaker Corporation at the annual meeting held in Jersey City, conducted a sort of an inquisition as to the affairs of the company and many facts were brought out of an important nature that heretofore had not been known.

C. A. Morse, a large stockholder of the company and a member of the New York Stock Exchange firm of Clark, Childs & Co., was the leader in questioning President Erskine as to the conditions in the company which caused the great slump in the market value of Studebaker shares. Frederick S. Fish, chairman of the board of directors of the corporation, was obliged to lend assistance to President Erskine, the questions coming so fast.

Mr. Fish said that of the $50,000,000 of gross business, $43,000,000 came from the automobile department, the remainder representing the business of the other departments of the company.

Mr. Morse asked: "Why is it that the Studebaker corporation in a year when practically all lnes of business flourished was only able to earn net profits of less than nine per cent. when other motor companies were prosperous?"

"The small net profits were due to the fact that the overhead charges were heavy while the company was changing the model of its car," replied Mr. Fish.

The chairman denied stories of large salaries and bonuses which it has been rumored were received by three officers of the concern. Mr. Morse said he had heard one rumor place the amount supposed to have been given these officers at $1,100,000. Mr. Fish denied that as much as even 25 per cent. of that figure was ever received by officers as salaries and bonuses in any one year.

Mr. Morse asked in regard to what constituted the inventory of $21,000,000. Mr. Fish explained that at the end of the year the company had on hand about 4500 unsold cars of the old model, but read a telegram received during the meeting which said that the amount had been reduced to 2300 cars.

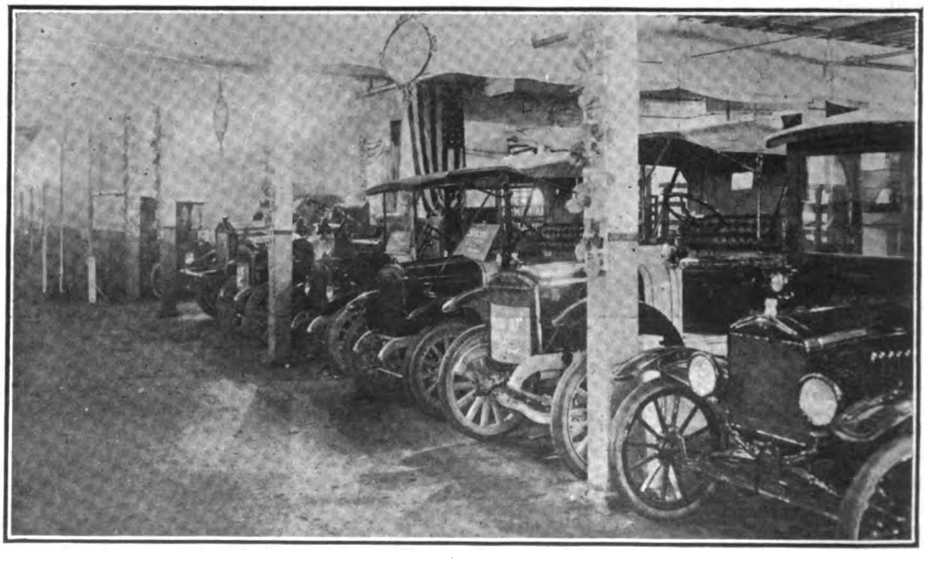
In answer to the question from one of the stockholders as to whether the dividend on common shares will be passed in the immediate future, Mr. Fish said that the dividend meeting is about five weeks off and that he could not say what the directors will do then.

It is estimated that the company's net profits for this year will total about $6,000,000, against $3,500,000 last year. Fifty per cent. of the plant has been devoted to government work.

Arthur Lehman of Lehman Bros. was elected a director in place of Maj. Herbert Lehman, now in the government service.

## WILL REPORT ON EXTENT OF PRODUCTION CURTAILMENT.

The National Automobile Chamber of Commerce has sent out to car manufacturers who are members of that organization, blanks for gathering correct data on the extent of the curtailment that will result from the recent agreement to cut by 30 per cent. the remaining production schedules on passenger cars for this season. After the data has all been gathered it will be used in a report to be made to the War Department through Hugh Chalmers, who is now stationed in Washington as a representative of the N. A. C. C.



**Trucks Designed for the Various Needs of Business and Industry Were Shown in the Basement of the Big Mechanics Building.**

# Annual Meeting of United States Rubber Co.

### Directorate Enlarged and J. N. Gunn, President of U. S. Tire Co., Was Elected a Member.

The annual meeting of the stockholders of the United States Rubber Co. was held at New Brunswick, N. J., and the proposed amendments to the by-laws were adopted and the number of directors was fixed at 24. All members of the present board of 21 were renominated, consisting of the following: James S. Alexander, New York; Walter S. Ballou, Providence; James C. Brady, New York; Nicholas F. Brady, New York; Middleton S. Burrill, New York; Samuel P. Colt, Providence; Harry E. Converse, Boston; Edgar B. Davis, Brockton; James Deshler, New Brunswick; James B. Ford, New York; Francis L. Hine, New York; Henry L. Hotchkiss, New Haven; William S. Kies, New York; Lester Leland, Boston; Samuel M. Nicholson, Providence; Raymond B. Price, New York; Homer E. Sawyer, New York; Charles Seger, New York; William H. Truesdale, Greenwich, Conn.; Theodore N. Vail, Boston; Elisha S. Williams, New York.

Three new members were added: James N. Gunn, Ernest Hopkinson and Nathaniel Myers.

Nathaniel Myers, who has been the chief resident counsel of the United States Rubber Co. for the past 10 years, and as such most intimately associated with the affairs of the company, was elected a director.

Ernest Hopkinson, who has been closely associated with the United States Rubber Co. since the acquisition of the Rubber Goods Manufacturing Co. in 1915, was also elected a director. Mr. Hopkinson was a director and vice president of the Rubber Goods Co. when the United States Rubber Co. acquired that company, his specialty being the tire art, to which he has given almost exclusive attention for the past 20 years, both from the standpoint of a patent lawyer and expert, as well as the practical end.

J. Newton Gunn, now president of the United States Tire Co. and as such in charge of the commercial end of the tire division of the United States Rubber Co. and under whose management the tire business has grown rapidly, was also elected a director.

At a reorganization meeting of the United States Rubber Co., Col. Samuel P. Colt was re-elected president. Other officers elected were: James B. Ford and Lester Leland, vice presidents; Homer E. Sawyer, in charge of footwear; Elisha S. Williams, in charge of mechanical division; W. D. Parsons, comptroller and treasurer; W. H. Blackwell, assistant treasurer; Samuel Norris, secretary; John D. Carberry, assistant secretary; H. B. Hubbard, assistant comptroller; W. O. Cutter, assistant comptroller, and George E. Smith, auditor.

The executive committee will be composed of Samuel P. Colt, James B. Ford, Lester Leland, Walter S. Ballou, Nicholas F. Brady and Charles B. Seger. The operation council will consist of James M. Dunn, chairman; Homer E. Sawyer E. S. Williams, Ernest Hopkinson and Theodore Whittelsey.

### GREENFIELD TAP AND DIE ISSUES SOUVENIR BOOKLET.

The Greenfield Tap and Die Corporation, Greenfield, Mass., issued a souvenir booklet on the occasion of the formal opening of their new office building and shipping room and recreation building on March 5. The occasion of this "House Warming," as it was called, was to give the people of Greenfield and their friends outside an opportunity to look over the new buildings. Both of these new buildings are described briefly in the booklet.

The erection of these two buildings marks the complete amalgamation of the various units and divisions of the Greenfield Tap and Die Corporation, with its various plants in different parts of Greenfield.

The reception itself was marked by a very large attendance from the people of Greenfield, about 5000 persons visiting the buildings during the afternoon and evening.

Mr. F. O. Wells, president, and Mr. F. H. Payne, vice president, assisted by other members of the board of directors, received, and members of the office force acted as ushers and guides to explain the various departments and show the many labor saving and modern improvements in office equipment. Mr. J. T. Seller, secretary of the company, was chairman of the general arrangements committee. The booklet was prepared under the direction of Mr. W. L. Robbins, advertising manager. Refreshments were served and an orchestra furnished music.

### THE GREENLEAF CO. OCCUPIES NEW QUARTERS.

The Greenleaf Co., advertising and merchandising counsel, Boston, Mass., have sent out announcement in commemoration of their third anniversary, which was observed by the occupancy of an entire floor in the new Christian Endeavor building. This building, which is located at 41 Mt. Vernon street, is near the Massachusetts State House. A. E. Greenleaf, Henry Knott and G. R. Dunham extend a cordial invitation to visit them in their new offices.

### CREDITORS COMMITTEE OF GRAY & DAVIS DISCHARGED.

The creditors committee of the Gray & Davis, Inc., Boston, Mass., was discharged on March 23 after liquidating claims of over $2,500,000 during the past 16 months. The company is now in excellent financial condition again and is doing a big business.

# Pierce-Arrow Sales in 1917 Showed Big Increase

### Gross for Year $32,565,908, Against $18,687,287 in 1916. Profits $4,791,274 Against $4,076,167 in Previous Year.

The Pierce-Arrow Co. reports a net income for 1917 of $4,791,274, compared with $4,076,167 for the same period of the previous year. The company's Federal taxes amount to $1,161,802, leaving a balance of $3,629,472. Net profits from this totaled $3,598,748, from which preferred dividends of $800,000 and common dividends of $625,000 were paid. The balance, carried to the surplus account, amounted to $2,178,748, compared with $4,070,259.

After preferred dividends the balance of net profits was equivalent to $11.19 a share on 250,000 shares of common stock of no par value, as compared with $13.08 a share earned in 1916.

In his remarks to stockholders Charles Clifton, president of the company, says that the gross sales amounted to $32.565,908, as compared with $18,687,287 for 1916. This increase, he says, was due in large part to war orders from the United States and allied governments.

He says that in conformity with the desires of the government the output of passenger cars will be greatly curtailed this year, continuing on a moderate scale sufficient to supply the current demand and maintain the integrity of the sales organization.

### JENKINS VULCAN SPRING GENERAL OFFICES ARE MOVED

The general offices of the Jenkins Vulcan Spring Co., formerly maintained at St. Louis, Mo., have been moved to the new plant at Richmond, Ind. The greatly increased demand for Vulcan springs made it necessary to secure greater manufacturing facilities, and the new plant has already proved its capacity for an output exceeding anything in the past history of the company. The Richmond factory is not only larger than the old factory, but is equipped with the most modern spring making machinery and is located in close proximity to the supplies of raw materials which enter into the Vulcan product. The company has anticipated war conditions by laying in a large stock in all these lines of materials.

The Vulcan spring is immediately adjustable to any car and is a distinct and separate spring, which exactly replaces any make of spring on any make of car. Over 3000 dealers now handle the line. The company's Texas branch has been moved from 708 Commerce street, Fort Worth, to 209 South Houston street, Dallas. It is in charge of Messrs. Egan & Rhame.

# *Ford Company Has Surplus of $131,904,907*

### Over $20,000,000 Added Last Year and Plant Assets Doubled in Value to $25,637,959.

A report of the Ford Motor Co. to the State of Massachusetts for the year ending July 31 last showed a total surplus of $131,604,907, an increase of $20,000,000 over the previous year. The value of the plant assets or machinery and equipment doubled as compared with its value at the end of the preceding fiscal year, totaling $25,637,959. The balance sheet shows under accounts payable an item of $19,983,256, and $5,952,902 is credited to accrued expenses and $6,433,936 set aside for depreciation.

## WISCONSIN AUTO TOP WILL DOUBLE MANUFACTURING SPACE.

The maintenance of high quality standards in products has always brought its reward to manufacturers and with their integrity unquestioned they enjoy a steadily increasing demand from year to year for their products, which means constant expansion of their business and production capacity. This first principal of good business has always been adhered to by the Wisconsin Auto Top Co. of Racine, Wis., manufacturers of the well known and widely used Badger brand of seat covers for automobiles, and their products are enjoying a popularity that has called for further enlargement and expansion of the manufacturing facilities at the plant, and to meet the demand promptly a new factory is being built which will double the present floor space. It is a model of up-to-dateness and will be ready for occupancy this spring. Efficient system of arrangement of the various departments and the most modern type of equipment will enable the company to maintain its reputation for quality in manufacture and at the same time speed up deliveries.

The company has recently added tire covers and slip roof outfits to its line. The new members of the line are on a par in merit with their other products, as they represent the same acme of quality in material and workmanship.

## FRUEHAUF TRAILER CO. HAS DOUBLED PRODUCTION.

The Fruehauf Trailer Co., Detroit, Mich., has increased its capitalization to $150,000 to finance the expansion made necessary in its manufacturing facilities by the greatly increased demand for its products, which include a line of semi-trailers of one to 10-ton capacities. In the past two months the production of trailers has been doubled and the dealer organization is now being enlarged.

At a recent meeting of the directors the following officers were elected: President and treasurer, A. C. Fruehauf; vice president and general manager, Harvey C. Fruehauf; secretary and sales manager, E. L. Vosler.

## COMMERCIAL MOTORBODY CORP.

The Commercial Motorbody Corporation, with offices at 50 East 42nd street, New York City, which has acquired a plant in Detroit, is to establish similar warehouses and shops in Chicago and New York City, where it purposes to have large stocks of bodies of all types ready for shipment or delivery. These will be produced by different manufacturers and statement is made that about 400 different styles or types will be sold, affording quick service to truck agencies, branches and to buyers. The officers of the corporation are: P. H. Patriarche, president and general manager; Charles M. Eaton, vice president; Addison G. Brown, second vice president and assistant general manager; A. B. F. Harraden, director of sales; O. A. Huener, assistant director of sales; J. M. Cunningham, director of agencies and publicity; J. Greenway Bain, secretary.

# *Rayfield Has Unique History*

### E. A. Bates Discovered Carburetor Manufacturers in Basement Shop.

Many of the world's best known mechanical inventions have a romantic history. Some have attained early success, while others have remained in the stages of development over long periods before they gained a popular sale. No matter how valuable or how practical an idea may be it cannot be successful in a big way unless its presentation to the prospective buyer is backed up, first by distribution; second, by proper advertising, and thirdly, by merchandising knowledge.

An excellent example of this principle of business is found in the great success attained for the Rayfield carburetor through the efforts of E. A. Bates, sales and advertising manager of the Findeison & Kropf Manufacturing Co., Chicago.

In 1910 Mr. Bates, while engaged in selling brass auto accessories for Findeison & Kropf, made a business call on the Rayfield brothers, who operated a small machine shop in a basement on Michigan avenue. Charles Rayfield, one of the brothers had invented a new carburetor and while possessing great merit, not much of a demand had been created for it.

Mr. Bates foresaw the opportunity for this new device and was sure he had found something of vital importance to the automobile industry. He readily convinced his employers of the big things that could be accomplished in the marketing of this product and the company soon absorbed the small Rayfield shop.

Under Mr. Bates' guidance, great educational publicity and direct advertising campaigns were successfully conducted from coast to coast, and today the Rayfield carburetor enjoys the distinction of being nationally known as one of the best.

Mr. Bates' efforts and knowledge of advertising and selling were largely responsible for its huge success in the accessory field and for the splendid results accomplished with the carburetor he was appointed to his present position in which he directs the sales and advertising departments of his company.

# *Paige-Detroit Co. Will Market Trucks*

### Well Known Automobile Manufacturers Will Manufacture Full Line of Commercial Cars.

The Paige-Detroit Motor Car Co., Detroit, Mich., has announced that it has entered the truck manufacturing field and that a line of trucks bearing the Paige name will be on the market before summer. A newly created factory organization and plant equipment will handle this new Paige enterprise and it is generally believed that this fact would indicate that the recent reported negotiations for the plant of the Signal Motor Truck Co. have been broken off.

## GREENFIELD TAP AND DIE PIPE TOOL CATALOGUE.

The Greenfield Tap and Die Corporation, Greenfield, Mass., has issued a new "Pipe Tools Catalogue," No. 38, which is a revised and completed edition of the first catalogue of this number which was sent out some time ago.

It not only contains a complete list of the products of the pipe tool division of the corporation with illustrations, but miscellaneous tables of information that make it a valuable aid to any mechanic or person in the trade.

## UNIVERSAL BATTERY CO. OFFERS COMPLETE SERVICE.

The Universal Battery Co., Chicago, Ill., is offering a battery service designed to meet the requirements of garage owners, service stations and supply men. Heretofore it has been necessary for the men in the trade to deal with a dozen different makers of batteries and battery parts in order to get supplied with the hundred and one parts which battery users are constantly in need of. This necessity for dealing with so many different makers has always resulted in a considerable loss of time and often confusion in the auto repair business.

The Universal Battery Co. claims that they have eliminated this unsatisfactory method, as they not only make and carry in stock complete batteries, but that they also have on hand at all times plates and parts for every battery for which there is a popular demand.

# *Motor Industry Hums on Munitions Contracts*

## *Making 20,560 Trucks and 13,625 Motorcycles*

CONTRACTS made under the direction of the Motors Division of the Quartermaster's Department at Washington have been announced, covering the production of 10,650 truck chassis and trucks, of which the Garford Motor Truck Co., Lima, O., will build 900 chassis; the Locomobile Co. of America, Bridgeport, Conn., 1650 chassis; the Pierce-Arrow Motor Truck Co., Buffalo, 2300 1½-ton trucks and 1000 five-ton trucks; the Packard Motor Car Co., Detroit, 4800 two-ton trucks.

The Harley-Davidson Motor Co., Milwaukee, will build 8125 motorcycles and the Hendee Manufacturing Co., Springfield, Mass., 5500 motorcycles, a total of 13,625 machines.

Contracts for truck bodies call for 24,100 class B (three-ton rating) bodies and for 2575 class A (1½-ton rating) bodies, a total of 26,675 bodies of both types. These are scattered with 11 different concerns, the largest contract being for 9000 units, made with the International Harvester Co., Chicago.

In addition to these contract has been made with the following companies for complete assemblies of trucks, the government to supply the parts, the rating of the machines being for class B only. The number awarded each contractor was as follows: Gramm-Bernstein Motor Truck Co., Lima, O., 1000; Kelly-Springfield Motor Truck Co., Springfield, O., 500; Indiana Truck Corporation, Marion, Ind., 500; Service Motor Truck Co., Wabash, Ind., 500; Republic Motor Truck Co., Alma, Mich., 1000; Pierce-Arrow Motor Car Co., Buffalo, 1000; Selden Truck Sales Co., Rochester, N. Y., 1000; Bethlehem Motors Corporation, Allentown, Pa., 700; Diamond T Motor Car Co., Chicago, Ill., 650; United States Motor Truck Co., Cincinnati, O., 500; Brockway Motor Truck Co., Cortland, N. Y., 650; Velie Motors Corporation, Moline, Ill., 500; Sterling Motor Truck Co., Milwaukee, 500; Garford Motor Truck Co., Lima, O., 1000; a total of 10,000.

The complete list of the contractors of all descriptions and the character of the contract in connection with the assembly of 10,000 trucks is as follows:

## LIST OF CONTRACTS UNDER DIRECTION OF THE MOTORS DIVISION.

| Name and Location | Quantity | Item |
|---|---|---|
| Garford Motor Truck Co., Lima, O.... | 900 | Chassis |
| Locomobile Co. of America, Bridgeport | 1,650 | Chassis |
| Pierce-Arrow Motor Car Co., Buffalo.. | 2,300 | 1½-ton trucks |
| | 1,000 | 5-ton trucks |
| Packard Motor Car Co., Detroit...... | 4,800 | 3-ton trucks |
| Harley-Davidson Motor Co., Milwaukee | 8,125 | Motorcycles |
| Hendee Mfg. Co., Springfield, Mass.... | 5,500 | Motorcycles |
| Mulholland Co., Dunkirk, N. Y........ | 500 | Truck bodies, Type A |
| Hercules Buggy Co., Evanston, Ind... | 400 | Truck bodies, Type A |
| International Harvester Co., Chicago.. | 1,000 | Truck bodies, Type A |
| Theodor Kundtz Co., Cleveland........ | 550 | Truck bodies, Type A |
| Grand Rapids School Equipment Co., Grand Rapids.......................... | 6,400 | Truck bodies, Type B |
| Continental Car Co., Louisville, Ky.... | 2,000 | Truck bodies, Type B |
| Eagle Iron Works, Auburn, N. Y...... | 1,200 | Truck bodies, Type B |
| International Harvester Co., Chicago. | 9,000 | Truck bodies, Type B |
| Edw. G. Budd Mfg. Co., Philadelphia.. | 5,000 | Truck bodies, Type B (steel) |
| J. G. Brill Co., Philadelphia.......... | 300 | Truck bodies, Type B |
| | 125 | Truck bodies, Type A |
| Hopkins Mfg. Co., Hanover, Pa........ | 200 | Truck bodies, Type B |

## PARTS AND ASSEMBLIES, CLASS B, STANDARD MOTOR TRUCKS.

| | | |
|---|---|---|
| Continental Motors Corp., Detroit.... | 6,400 | Motors |
| Wisconsin Motor Co., Milwaukee...... | 1,000 | Motors |
| Waukesha Motor Co., Waukesha...... | 2,000 | Motors |
| Hinkley Motor Corp., Detroit......... | 1,200 | Motors |
| Timken-Detroit Axle Co., Detroit..... | 5,000 | Sets axles |
| The Sheldon Axle Co., Wilkesbarre... | 2,500 | Sets axles |
| American Ball Bearing Co., Cleveland.. | 2,000 | Sets axles |
| Covert Gear Co., Lockport, N. Y...... | 5,000 | Transmissions |
| Warner Gear Co., Muncie, Ind........ | 4,000 | Transmissions |
| T. W. Warner Co., Muncie, Ind....... | 2,000 | Transmissions |
| Muncie Gear Co., Muncie, Ind......... | 1,000 | Transmissions |
| Covert Gear Co., Lockport, N. Y...... | 4,000 | Clutches |
| Warner Gear Co., Muncie, Ind........ | 4,000 | Clutches |
| Detroit Gear & Machine Co., Detroit.. | 4,000 | Clutches |
| Covert Gear Co., Lockport, N. Y...... | 5,000 | Controls |
| Warner Gear Co., Muncie, Ind........ | 6,000 | Controls |
| Dayton Engineering Laboratories Co., Dayton .............................. | 10,000 | Generators |
| Bijur Motor Lighting Co., Hoboken... | 2,000 | Generators |
| Eisemann Magneto Co., Brooklyn, N. Y. | 5,000 | Magnetos |
| Splitdorf Electrical Co., Newark...... | 3,000 | Magnetos |
| Ericsson Mfg. Co., Buffalo............ | 2,000 | Magnetos |
| Remy Electric Division, United Motors Corp., Anderson...................... | 12,000 | Distributors and coils |
| Kellogg Switchboard & Supply Co., Chicago, Ill.......................... | 12,000 | Switches |
| Splitdorf Electrical Co., Newark...... | 500 | Magnetos |
| C. A. S. Products Co., Columbus...... | 2,500 | Steering gears |
| Warner Gear Co., Muncie, Ind........ | 3,000 | Steering gears |
| Ross Gear & Tool Co., Lafayette, Ind. | 1,000 | Steering gears |
| Gemmer Mfg. Co., Detroit............ | 5,000 | Steering gears |
| Fedders Mfg. Co., Buffalo............ | 2,000 | Radiators |
| McCord Mfg. Co., Detroit............ | 2,000 | Radiators |
| National Can Co., Detroit............ | 1,000 | Radiators |
| Perfex Radiator Co., Racine.......... | 1,000 | Radiators |
| Long Mfg. Co., Detroit............... | 4,000 | Radiators |
| English & Hersick Co., New Haven.. | 1,000 | Radiators |
| G. & O. Mfg. Co., New Haven........ | 1,000 | Radiators |
| Rome-Turney Radiator Co., Rome, N. Y. | 1,000 | Radiators |
| Savage Arms Corp., Sharon, Pa....... | 2,500 | Frames |
| A. O. Smith Corp., Milwaukee........ | 2,000 | Frames |
| The Hydraulic Pressed Steel Co., Cleveland .......................... | 2,000 | Frames |
| Detroit Pressed Steel Co., Detroit..... | 2,000 | Frames |
| Parish & Bingham Co., Cleveland..... | 2,000 | Frames |
| Detroit Steel Products Co., Detroit... | 4,000 | Springs (front) |
| | 4,000 | Springs (rear) |
| Standard Parts Co., Cleveland......... | 8,000 | Springs (front) |
| | 6,000 | Springs (rear) |
| The Mather Spring Co., Toledo........ | 6,000 | Springs (front) |
| | 6,000 | Springs (rear) |
| Sheldon Axle & Spring Co., Wilkesbarre ............................ | 4,000 | Springs (front) |
| | 4,000 | Springs (rear) |
| The Cleveland Canton Spring Co., Canton, O........................... | 4,000 | Springs (front) |
| | 4,000 | Springs (rear) |
| Schwarz Wheel Co., Philadelphia...... | 500 | Sets wheels |
| Hayes Motor Truck Wheel Co., St. Johns, Mich........................ | 2,700 | Sets wheels |
| Standard Wheel Co., Terre Haute, Ind. | 300 | Sets wheels |
| The Auto Wheel Co., Lansing........ | 500 | Sets wheels |
| Prudden Wheel Co., Lansing.......... | 250 | Sets wheels |
| Dayton Steel Foundry Co., Dayton.... | 1,250 | Sets steel wheels (40 x 10) |
| Michigan Malleable Iron Co., Detroit.. | 750 | Sets steel wheels (40 x 10) |
| Standard Steel Castings Co., Cleveland | 2,000 | Sets steel wheels (40 x 10) |
| Dayton Steel Foundry Co., Dayton... | 1,000 | Sets steel wheels (40 x 12) |
| Michigan Malleable Iron Co., Detroit.. | 250 | Sets steel wheels (40 x 12) |
| Standard Steel Castings Co., Cleveland | 1,500 | Sets steel wheels (40 x 12) |
| Otis Elevator Co., New York, N. Y.... | 150 | Sets steel wheels (40 x 10) |
| | 100 | Sets steel wheels (40 x 10) |
| Prudden Wheel Co., Lansing.......... | 500 | Sets wood wheels |
| Bimel Spoke & Auto Wheel Co., Portland, Ind........................... | 500 | Sets wood wheels |
| Hayes Mfg. Co., Detroit............. | 8,000 | Seat assemblies |
| C. R. Wilson Body Co., Detroit........ | 3,000 | Seat assemblies |
| Michigan Stamping Co., Detroit...... | 8,000 | Dashes |
| International Metal Stamping Co., Detroit ................................ | 3,000 | Dashes |
| International Metal Stamping Co...... | 5,000 | Hoods |
| Hayes Mfg. Co., Detroit............. | 6,000 | Hoods |
| | 11,000 | Fenders (pairs) |
| | 5,000 | Fan shrouds |
| Michigan Stamping Co., Detroit...... | 6,000 | Fan shrouds |
| Geuder, Paeschke & Frey, Milwaukee. | 5,500 | Feed tanks |
| | 5,500 | Reserve tanks |
| Kardell Bros. Co., Utica, N. Y........ | 5,000 | Feed tanks |
| | 5,000 | Reserve tanks |
| Hartford Auto Parts Co., Hartford.... | 2,000 | Universal joints, rear |
| Kinsler-Bennett Co., Hartford........ | 2,000 | Universal joints, front |
| Peters Machine & Mfg. Co., Cleveland | 2,500 | Universal joint assemblies |
| Spicer Mfg. Corp., Plainfield.......... | 4,000 | Universal joint assemblies |
| Universal Machine Co., Bowling Green, O........................... | 3,500 | Universal joint assemblies |

| | | |
|---|---|---|
| Philadelphia Storage Battery Co., Philadelphia | 2,000 | Batteries |
| Prestolite Co., Indianapolis | 3,000 | Batteries |
| U. S. Light & Heat Corp., Washington | 2,500 | Batteries |
| Vesta Accumulator Co., Chicago | 2,000 | Batteries |
| Utility Battery Co., Chicago | 1,000 | Batteries |
| Willard Storage Battery Co., Cleveland | 2,500 | Batteries |
| Detroit Battery Co., Detroit | 1,000 | Batteries |
| Guide Motor Lamp Mfg. Co., Cleveland | 2,500 | Sets lamps |
| Edmunds & Jones Corp., Detroit | 3,000 | Sets lamps |
| C. M. Hall Lamp Co., Kenosha | 4,500 | Sets lamps |
| Indiana Lamp Co., Connersville, Ind. | 1,500 | Sets lamps |
| Barbee Wire & Iron Works, Lafayette, Ind | 3,000 | Radiator guards |
| Buffalo Pitts Co., Buffalo | 2,000 | Radiator guards |
| Stewart Iron Works Co., Cincinnati | 2,000 | Radiator guards |
| Gier Pressed Steel Co., Lansing | 3,000 | Radiator guards |
| Van Dorn Iron Works, Cleveland | 2,000 | Radiator guards |
| Michigan Stamping Co., Detroit | 6,000 | Dust pans |
| J. W. Murray Mfg. Co., Detroit | 5,000 | Dust pans |
| H. W. Johns-Manville Co., New York | 2,000 | Odometers |
| Stewart-Warner Speedometer Corp., Chicago | 10,000 | Odometers |
| Schweppe & Wilt Mfg. Co., Detroit | 3,000 | Reach rods |
| Michigan Plant Steel Products Co., Detroit | 5,000 | Reach rods |
| Cincinnati Ball Crank Co., Oakley, Cincinnati | 3,500 | Reach rods |
| Schweppe & Wilt Mfg. Co., Detroit | 2,500 | Sprag assemblies |
| Gier Pressed Steel Co., Lansing | 2,500 | Sprag assemblies |
| Detroit Pressed Steel Co., Detroit | 2,500 | Sprag assemblies |
| Stewart Iron Works, Cincinnati | 3,000 | Sprag assemblies |
| Thompson Mfg. Co., Des Moines | 3,500 | Sprag assemblies |
| Michigan Plant Steel Products Co., Detroit, Mich. | 7,000 | Crank assemblies |
| Stromberg Motor Devices Co., Chicago | 1,250 | Carburetors |
| Zenith Carburetor Co., Detroit | 1,250 | Carburetors |
| Stromberg Motor, Chicago | 8,300 | Carburetors |
| Michigan Stamping Co., Detroit | 6,000 | Bumpers |
| Salisbury Wheel and Axle Co., Jamestown, N. Y. | 5,000 | Bumpers |
| Gramm-Bernstein Motor Truck Co., Lima, O. | 1,000 | Assemblies |
| Kelly-Springfield Motor Truck Co., Springfield, O. | 500 | Assemblies |
| Indiana Truck Corp., Marion, Ind. | 500 | Assemblies |
| Service Mtr. Truck Co., Wabash, Ind. | 500 | Assemblies |
| Republic Mtr. Truck Co., Alma, Mich. | 1,000 | Assemblies |
| Pierce-Arrow Mtr. Car Co., Buffalo | 1,000 | Assemblies |
| Selden Truck Sales Co., Rochester | 1,000 | Assemblies |
| Bethlehem Motors Corp., Allentown | 700 | Assemblies |
| Diamond T. Motor Car Co., Chicago | 500 | Assemblies |
| | 150 | Assemblies |
| United States Motor Truck Co., Cincinnati | 500 | Assemblies |
| Brockway Motor Truck Co., Cortland, N. Y. | 500 | Assemblies |
| | 150 | Assemblies |
| Velie Motors Corp., Moline | 500 | Assemblies |
| Sterling Mtr. Truck Co., Milwaukee | 500 | Assemblies |
| Garford Mtr. Truck Co., Lima, O. | 1,000 | Assemblies |
| Oldberg Mfg. Co., Detroit | 3,000 | Mufflers |
| Michigan Stamp. Co., Detroit | 2,000 | Mufflers |
| Gemco Mfg. Co., Detroit | 3,000 | Mufflers |
| Xardell Brothers Co., Utica | 3,000 | Mufflers |
| Standard Parts Co., Cleveland | 5,000 | Draw bar assemblies |
| Savage Arms Corp., Sharon, Pa. | 3,000 | Draw bar assemblies |
| Salisbury Wheel and Axle Co., Inc., Jamestown, N. Y. | 3,000 | Draw bar assemblies |
| Steel Products Co., Cleveland | 8,000 | Rear spring shackle pins |
| | 8,000 | Rear spring frt. brack. pins |
| | 24,000 | Frt. spr. hangers and shackle bolts |
| | 8,000 | Engine support bolts (front) |
| | 22,000 | Engine support bolts (rear) |
| Brown Co., Syracuse | 7,000 | Rear spr. shackle pins |
| | 7,000 | Rear spr. frt. brack. pins |
| | 21,000 | Frt. spr. hangers and shack. bolts |
| | 9,000 | Frt. spr. hangers and shack. bolts |
| | 7,000 | Engine support bolts |
| | 7,000 | Brake equal. lever pins |
| | 5,000 | Rear spr. shackle bars |
| Michigan Screw Co., Lansing, Mich. | 15,000 | Brake equal. lever pins |
| | 7,000 | Spring shackle pins 7414-V |
| | 7,000 | Rear spr. frt. brack. pins |
| | 7,000 | Engine support bolts |
| Columbia Axle Co., Cleveland | 6,000 | Rear spr. shackle bars |
| Standard Parts Co., Cleveland | 5,500 | Sets rear spr. shack. sub-assem. |

| | | |
|---|---|---|
| National Machine Products Co., Detroit | 5,500 | Sets rear spr. shack. sub.-assem. |
| E. A. Laboratories, Inc., New York | 12,000 | Warning signals |
| General Motors Corp., Flint | 5,500 | Transm. frt. hangers |
| Standard Parts Co., Cleveland | 5,500 | Transm. frt. hangers |
| General Motors Corp., Flint | 11,000 | Spr. shac. forgings |
| Standard Parts Co., Cleveland | 11,000 | Spr. shac. forgings |
| General Motors Corp., Flint | 5,500 | Engine supports |
| Standard Parts Co., Cleveland | 5,500 | Engine supports |
| Massnick Mfg. Co., Detroit | 6,000 | Steering gear fram brackets |
| | 6,000 | Steering gear fram brack. caps |
| | 6,000 | Intermed. brake sha brack. |
| Standard Parts Co., Cleveland | 5,000 | Intermed. brake sha brackets |
| National Machine Products Co., Detroit | 5,000 | Steering gear fram brackets |
| | 5,000 | Steering gear fram brack. caps |
| Union Forging Co., Union, N. Y. | 40,000 | Minor parts |
| Sterling Mtr. Truck Co., Milwaukee | 103,000 | Minor parts |
| | 24,000 | Minor parts |
| Indiana Mtr. Truck Co., Marion, Ind. | 147,000 | Minor parts |
| Gramm-Bernstein Mtr. Truck Co., Lima | 257,000 | Minor parts |
| Cleveland Hardware Co., Cleveland | 82,000 | Minor parts |
| Standard Parts Co., Cleveland | 520,000 | Minor parts |
| Stewart Iron Works, Cincinnati | 110,000 | Minor parts |
| Gramm-Bernstein Motor Truck Co., Lima, O. | 5 | Complete assem. min parts |
| | 515 | Minor parts |
| Empire Brass Mfg. Co., Cleveland | 6,000 | Gas reserve tank dra cocks |
| Metal Forming Corp., Elkhart, Ind. | 5,000 | Exhaust pipes |
| Standard Brass Works, Detroit, Mich. | 5,000 | gas reserve tank dra cocks |
| | 11,000 | Radiator drain cocks |
| Cook Spring Co., New York, N. Y. | 11,000 | Springs, brass wire |
| Burton Lowery Co., Detroit | 4,000 | Sets upholstery |
| J. C. Wilson Co., Detroit | 3,000 | Sets upholstery |
| Briggs Mfg. Co., Detroit | 2,000 | Sets upholstery |
| American Auto Trimming Co., Detroit | 2,000 | Sets upholstery |
| Walker Mfg. Co., Racine, Wis. | 4,000 | Sets jacks |
| Keeler Brass Co., Grand Rapids, Mich. | 500 | Sets brass hood fast. |
| | 4,500 | Sets hood fast., mal iron |
| Columbus Auto Parts Co., Grand Rapids | 3,000 | sets hood fast., stee |
| Hancock Mfg. Co., Charlotte, Mich. | 3,000 | sets hood fast., stee |
| Hughes & Curren Co., Rochester | 3,000 | cape tops |
| Briggs Mfg. Co., Detroit | 3,000 | cape tops |
| Anchor Top and Body Co., Cincinnati. | 3,000 | cape tops |
| American Auto Trimming Co., Detroit | 3,000 | cape tops |
| Gramm-Bernstein Motor Truck Co., Lima | 250 | Sets spark and thro control assem. |
| Standard Parts Co., Cleveland | 5,000 | Sets spark and thro control assem. |
| National Machine Products Co., Detroit | 6,000 | Sets spark and thro control assem. |
| American Brass and Iron Co., Detroit. | 6,000 | Gas. feed pipe shut-off cocks |
| Standard Brass Works, Detroit | 5,000 | Gas. feed pipe shut-off cocks |
| Packard Electric Co., Warren, O. | 4,500 | Sets wiring assem. |
| Remy Electric Division United Motors Corp., Anderson, Ind. | 4,500 | Sets wiring assem. |
| Barcy Nicholson Co., Detroit | 2,000 | Sets wiring assem. |
| Dover Stamping & Mfg. Co., Cambridge | 11,000 | Funnels |
| Gray & Davis, Inc., Boston | 11,000 | Light bulbs, cases |
| National Can Co., Detroit | 10,000 | Water cans |
| Chicago Raw Hide Mfg. Co., Chicago | 10,000 | Fan belts |
| Graton & Knight Mfg. Co., Worcester, Mass. | 10,000 | Fan belts |
| Crowe Name Plate & Engraving Co., Philadelphia | 10,500 | Name plates |
| Champion Ignition Co., Flint | 100,000 | Spark plugs |
| Vlcheck Tool Co., Cleveland, O. | 11,000 | Sets tool bag equip. |
| | 11,000 | Wrenches, brake adj |
| | 3,000 | Wrenches, worm |
| | 6,000 | Wrenches, tappet |
| | 3,000 | Valve lifters |
| | 3,000 | Wrenches, spr. clip open end, 1 in. |
| | 3,000 | Wrenches, spr. clip. open end, ¾ in. |
| | 3,000 | Handles, pipe, galv., 16 in. long |
| | 3,000 | Gauges, valve tappet etc. |
| Standard Parts Co., Cleveland, O. | 6,000 | Gas. feed pipe, sub assemblies |
| Imperial Brass Co., Chicago, Ill. | 5,000 | Gas feed pipe, sub assemblies |
| Cook Spring Co., New York, N. Y. | 11,000 | Radiator foot bolt springs |
| | 11,000 | Brake rod springs |
| | 11,000 | Start. crank catch brack. springs |

# Curtailment In Car Production

## Unfinished Schedules for Passenger Car Output Will Be Reduced About Thirty Per Cent.

A total of 117 automobile manufacturers, members of the National Automobile Chamber of Commerce, will make a reduction of 30 per cent. in the uncompleted schedules of passenger cars for the current fiscal year. To what extent this curtailment in production will reduce the total output for the season is as yet unknown, as no figures are available as to the number of cars that have been turned out to date by these manufacturers and what portion of their total schedule has been manufactured.

Representatives of several of the largest automobile manufacturing concerns in the industry were called to Washington some time ago at the request of the War Industries Board and the Fuel Administration, to discuss the situation and determine to what extent further assistance might be rendered and the government needs supplied.

A review of the situation covering a period of several weeks resulted in the proposal of the presentatives of the N. A. C. C. of a voluntary reduction in its uncompleted schedules as stated.

This arrangement has been declared satisfactory to the War Industries Board, the Fuel Administration and the manufacturers, permitting the latter to adjust their affairs to meet the government program without unnecessary business and financial disturbance.

The importance of the automobile industry and the prominent part it is taking in connection with war work, already supplying Liberty motors and aircraft equipment, trucks, ambulances, munitions, gun carriages, field and road tractors and tanks is daily becoming more apparent, and in order to take up this work the car manufacturers will be obliged to divert their organizations and manufacturing equipment from automobile production.

To further coordinate the war needs of the government with the capacities of the automobile plants, the National Automobile Chamber of Commerce decided to establish a general headquarters at Washington in charge of Hugh Chalmers, vice president of the association and chairman of the Chalmers Motor Co.

Work of this kind has been cared for by the Automobile Industries Committee, which it was voted to dissolve and to have the automobile manufacturers represented at Washington by a vice president and staff of the organization. Engineers to help manufacturers in connection with government work, will be located at headquarters.

A vote of thanks was extended to the members of the Automobile Industries Committee for the work accomplished at Washington and the members passed a resolution indorsing the work of the newly formed Highways Industries Association and appointed William E. Metzger and Windsor T. White to represent the motor car and truck manufacturers in that organization.

### OBTAINING HIGHEST MILEAGE FROM GALLON OF GASOLINE.

When the average car owner begins to figure up the cost of car upkeep and his car mileage per gallon of gasoline, he seldom considers the amount of engine and car friction. That internal friction is a big factor in a gasoline engine is well known, and for this reason it is fitting that every automobile user should pay particular attention to his automobile lubricant. Many automobilists find that Dixon's graphite automobile lubricants answer the purpose of cutting down friction, and in addition make for cleaner engines because they are said to leave little or no carbon deposit. The little flakes of graphite are said to fill in all rough places in the metal and make a smooth surface.

A properly lubricated car lasts longer, gives more satisfaction and costs less for upkeep. The owner can take practically all worries from his mind as regards the car as he will seldom be obliged to do extensive repair work that is necessitated through lack or neglect of lubrication in the proper places.

# Rieman President of Elgin Motor Car Corp.

### Business Founded Two Years Ago Now Has Daily Production Capacity of 100 Cars.

Announcement has just been made of the recent election of C. S. Rieman to the presidency of the Elgin Motor Car Corporation, Chicago, which he founded about two years ago. Mr. Rieman has been vice president and general manager of the company since its organization, and with the presidency he retains the title of general manager.

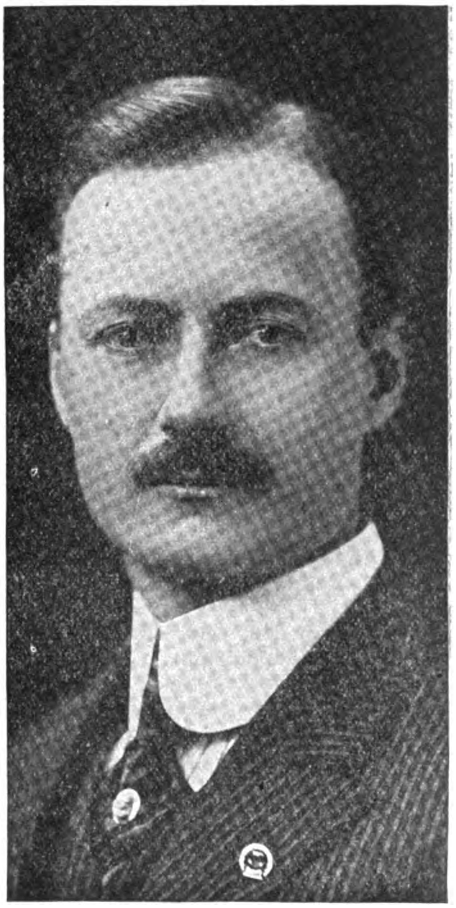
Mr. Rieman has been in full charge of all departments of the business since its beginning, and his elevation to the presidency is a well deserved tribute to the tremendous creating and organizing energy, managerial ability, tireless industry, which has been responsible for bringing the company to its present high standing in automobile and financial circles.

Under the management of Mr. Rieman the Elgin Corporation has made phenomenal records in growth and financial strength.

Starting manufacturing operations less than two years ago the Elgin company has been built up to a point where it now has one of the finest automobile factories in the country, with a production capacity of 100 cars per day, or $30,000,000 worth of automobiles a year.

The Elgin factory of modern steel and brick construction, with its 600 feet of conveyor assembly system, is said to be one of the finest automobile plants in the country, both as to building and equipment. The new Elgin administration building, adjacent to the main factory, will be ready for occupancy within a few days.

The company's second year showed increases over the first of 1074 per cent. in sales and 2000 per cent. in assets, a record which has probably never been equaled even in the automobile business. The Elgin company started operations in a small rented frame building. Soon thereafter a factory site was purchased and construction work has been going on almost continuously since that time. During the busy season last year two large circus tents were used to supplement the factory space, while new additions could be completed. Today the company owns 8½ acres of ground and the buildings contain more than 200,000 square feet of floor space, and is backed by paid in capital of approximately $3,000,000.



C. S. Rieman, New Head of Elgin Motor Car Corporation of Chicago.

The success of the Elgin company has been its remarkable management, which has been progressive and aggressive, under the direction of Mr. Rieman.

# *General Motors Will Increase Capital*

### Stockholders at Special Meeting Voted to Increase Stock to $200,000,000.

At a special meeting of the stockholders of the General Motors Corporation, held at Wilmington, Del., it was voted to increase the capital stock to $200,000,000. The new stock will be represented by $50,000,000 six per cent. preferred and $150,000,000 common stock.

The following directors were elected: P. D. Du Pont, A. G. Bishop, W. P. Chrysler, R. H. Collins, W. L. Day, H. F. Du Pont, Irene Du Pont, W. G. Durant, J. A. Haskell, L. G. Kauffman, J. H. McClement, C. S. Mott, J. J. Raskob, F. W. Warner and E. B. Linden. Five of the directors represent the Du Pont interests.

## NEW SANFORD MOTOR TRUCK DISTRIBUTORS.

The Sanford Motor Truck Co., Syracuse, N. Y., have announced the appointment of the following new distributors for Sanford trucks: R. V. Jones, Postal building, Kansas City, Mo., Kansas City and Oklahoma; The Lawrence Motor Sales Corporation, 136 West 52nd street, New York City, City of New York; Foley Motor Car Co., Newark, N. J., State of New Jersey; L. S. Hall Rubber Co., 804 North Carlisle street, Philadelphia, Pa., Philadelphia; J. A. Morris, 100 Temple street, New Haven, Conn., State of Connecticut; Oswego County Auto Co., Oswego, N. Y., Oswego County, N. Y.; R. E. Lent, Ossining, N. Y., Westchester County, N. Y.; W. Cady Smith, 1210 State street, Schenectady, N. Y., Schenectady County, N. Y.

## A. E. MALTBY HEADS PHILADELPHIA AUTOMOBILE ASSOCIATION.

A. E. Maltby has been elected president of the Philadelphia Automobile Trade Association to succeed J. H. Fassitt. Other officers elected are as follows: Vice president, Louis C. Bloch; secretary-treasurer, J. E. Gomery; directors, L. J. Eastman and J. H. Fassitt, in addition to the officers.

## J. J. KELLEHER SALES MANAGER OF STENMAN ELECTRIC GRINDER.

J. J. Kelleher has been appointed sales manager of the Stenman Electric Valve Grinder Co. of Worcester, Mass., manufacturers of electric valve grinders, electric drills and other labor saving devices for the use of garages, machine and repair shops. Mr. Kelleher, or Jack, as he is familiarly known in the trade, has been a sales representative in the eastern states for the past 20 years, calling on the bicycle, hardware and motor trades. His first selling position was with the old Pope Manufacturing Co., handling bicycles. Later he went with the Waltham Manufacturing Co., selling a similar line and buckboards, and was also with Iver Johnson Arms and Cycle Works, selling guns, revolvers and bicycles. In 1910 he engaged in business for himself, handling several factory accounts in the motor accessory line in the eastern states, which business he continued until the fall of 1916, when sickness compelled his retirement.

**J. J. Kelleher, Sales Manager of Stenman Electric Valve Grinder Co.**

## LES W. PLACE OF ALLEN SALES MANAGER MARRIES.

Automobile men throughout the country will read with interest the announcement of the marriage of Miss Vera Clark, daughter of Herbert J. Clark of Groveland Terrace, Minneapolis, to Mr. Les W. Place, general sales manager of the Allen Motor Co., on Tuesday, Feb. 5, at the bride's home in Minneapolis.

**Les W. Place, Allen Sales Manager, is on His Wedding Tour.**

Mrs. Place for several years has been a prominent member of Minneapolis society and is well known in New York and Paris, where she has spent considerable time in the study of art. Mr. Place not only heads the sales organization of the Allen industries, but is also sales manager of the truck division of the Turnbull Motor Truck and Wagon Co., Defiance, O. After the wedding Mr. and Mrs. Place left for Southern California and the Hawaiian Islands. Upon their return they will make their home in Fostoria, O., headquarters of the Allen Motor Co.

## MARMON PRICES HAVE BEEN ADVANCED $200.

The Nordyke & Marmon Co., Inc., Indianapolis, Ind., have announced an increase of $200 in the price of Marmon cars. The seven-passenger touring car and the four-passenger roadster list now at $3750, the five-passenger touring car at $3700 and the chassis with cowl at $3450.

## FOUR DIFFERENT BODIES IN NEW MERCER LINE.

The Mercer Automobile Co. of Trenton, N. J., has begun the distribution of a new lot of cars, and all models are equipped with four-cylinder motors, it being the established policy of the Mercer to specialize on motors of only four cylinders. The lines of the previous Mercers have also been closely adhered to. Several improvements and refinements have been made, but there are no radical changes in either chassis or bodies. Four different body styles are offered—a touring, a four-passenger sporting, a runabout and a raceabout.

The touring model is a very roomy car, particularly adapted to family use, while the four-passenger sporting model is all that its name implies, appealing to the man who wants a light car with plenty of snap and ginger. Both of these models have a chassis of 132-inch wheelbase.

The body details have been carefully worked out. The auxiliary seat compartment of the six-passenger is finished in black walnut paneling. Doors that roll out of sight, just like a roll top desk cover, hide the extra seats from view when they are not in use. A complete set of tools is carried in special compartments built into the front doors.

Under the centre cowl of the sporting model are three separate compartments, also covered with black walnut paneling. The middle compartment is sufficiently large to carry a good sized suit case, while the compartments on either side can be used for the carrying of thermos bottles or miscellaneous items.

The chassis used for the various models is essentially the same, the principal difference being in the length. The motor is the four-cylinder, four-cycle, L head block type. It has a bore of 3¾ inches, with a stroke of 6¾ inches. The piston displacement is 298.2 cubic inches.

# *U. S. Rubber Buys The Old Alco Plant*

**Several Buildings With Floor Area of 254,848 Feet Will Be Used for Making Tires.**

The United States Rubber Co. has purchased the plant of the American Locomobile Co. on Valley street, in Providence, R. I., where the Alco car was manufactured up to within several years ago, and will immediately begin the installation of equipment in the principal buildings for the manufacture of tires. Another large structure will be utilized for the making of balloons for the United States Army.

Col. Samuel P. Colt, president of the company, says that the purchase price was "somewhat under $500,000." The property is one of the biggest manufacturing establishments in the state, and is taxed for $371,220. Plans for the utilization of the plant by its new owners called for the earliest possible operation of the entire property. At least 3000 hands will be employed and the number may run as high as 5000. The property was purchased to meet the imperative needs of the United States Rubber Co. for largely increased facilities. The company's business has been expanded greatly by the war and could not be handled in the plants already in operation. The property runs through from Valley street on the north to the Woonasquatucket river on the south, and extends east to Hemlock street. The land has an area of 444,854 square feet, or slightly more than 10 acres, and the floor space contained in the building amounts to 245,848 feet. There are several large structures on the property, the main building being a three-story brick affair, measuring 63x493 feet. The property is served with a siding from the main line of the New Haven railroad.

In addition it adjoins the property of the Revere Rubber Co. on Valley street, which is already owned by the United States Rubber Co.

Solid and pneumatic tires will be made at the new plant, and while tires will be the principal output of the establishment, army balloons will also be manufactured according to present plans.

## PURITAN MACHINE BUYS YALE-8 MOTOR CAR CO.

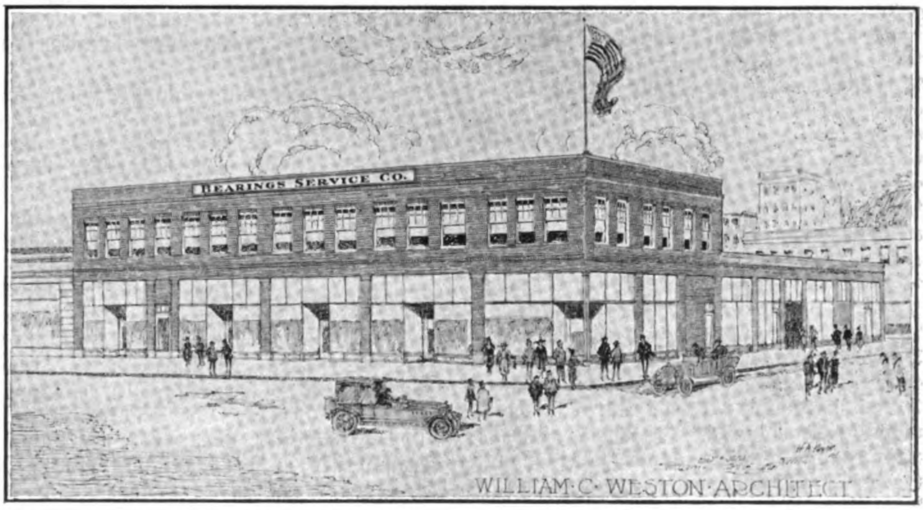
Alfred O. Dunk, president of the Puritan Machine Co., Detroit, Mich., recently announced the purchase of the Yale-8 Motor Car Co. With this name added to the long list of orphan cars for which parts are supplied by the Puritan Machine Co., the total is over 200. From time to time the Puritan has purchased the entire service stock, blue prints, drawings, dies, jigs and tools of such companies that are defunct or have discontinued their manufacture, and at present it is one of the most efficient and the largest establishments of its kind in the world. Parts can be supplied for any car regardless of year or model.

## BEARINGS SERVICE COMPANY TO MOVE TO LARGER QUARTERS.

The Bearings Service Co., general headquarters at Detroit, will soon move into new and larger offices. This building is located at the corner of Cass and Willis avenues, in the heart of the new automobile service section. The Detroit service branch of the company will occupy quarters on the ground floor. The entire second floor will be for the exclusive use of the general offices.

Although this is a young company, dating its start in September, 1916, its history has been one of truly remarkable development month by month. In September, 1916, just 16 months ago, the organization consisted of general headquarters and nine branch service stations. Today there are in over 275 of the most important automobile centres in America either a branch service station or an authorized agency of the Bearings Service Co., and it is planned to increase this number to over 500 in the next few months.

"The reason for this unusual growth," said Mr. R. S. Lane, president of the company, "is found in the extraordinary promptness and reliability of the service we render. Having been appointed official national service representative by the manufacturers of Timken, Hyatt and New Departure bearings, we were furnished by these manufacturers with engineering records and data that enable us to supply exactly the correct bearing part for any make of motor car, motor truck or tractor in which these bearings were ever installed. These records, together with the complete stocks of bearings kept in every branch, enable us obviously to give service that is not only exact, but prompt. It is only natural to expect that motorists will appreciate service of this kind and in their appreciation we find the reason for the great development of the Bearings Service Co



**New General Headquarters of the Bearings Service Co. at Cass and Willis Avenues in Heart of Detroit's Automobile Service Station.**

# *The Liberty Engine Is a Packard Product*

**President of Packard Branch Makes Sensational Announcement In New York.**

Emlen S. Hare, president of the Packard Motor Co. of New York, in speaking at the monthly dinner of the Sphinx Club in New York, made the sensational announcement that the Liberty Motor, which the government has adopted for its great fleet of airplanes, is a product of the Packard Motor Car Co. of Detroit, Mich.

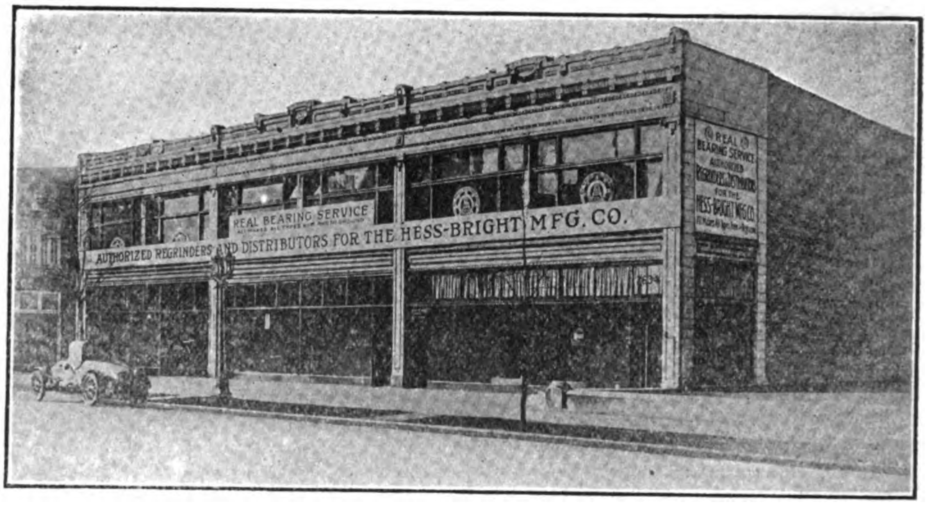
Mr. Hare was speaking on "Successful Business Is Our Best Weapon to Win This War," and evidently had not intended to make the announcement concerning the origin of the Liberty engine, as his speech as given to the reporters did not include the announcement, which was on a separate sheet of paper.

"I am now at liberty," he said, "to mention one instance—and there are many—showing the unselfishness of business where the best interests of our government are at stake. The Liberty aviation motor is the outcome of three years of Packard work and some half million Packard money, and yet we withdrew our name from this motor and, with all designs, gave it over to our government because they felt this would be best for the furtherance of their war plans.

Mr. Hare said that at the time the Liberty motor was taken over by the government an agreement existed between the company and E. A. Dees, then chairman of the Air Craft Production Board, to the effect that the identity of the inventor or producer of the motor should not be revealed.

Permission to make the announcement at this time was given by Howard Coffin, chairman of the Council of National Defense, Washington.

# *News of the Car and Parts Manufacturers In Brief*


REAL BEARING SERVICE
AUTHORIZED REGRINDERS AND DISTRIBUTORS FOR THE HESS-BRIGHT MFG. CO.

Main Plant of the Ahlberg Bearing Co., Chicago, Which Now Has 12 Branches for the Exchange of "Remade" and the Sale of New Bearings.

## Happenings Among the Leading Manufacturers in the Motor Vehicle Industry and Allied Lines, Present and In Prospect

**The Stegeman Motor Car Co.**, Milwaukee, Wis., has been reorganized with a capital of $200,000 and will carry on the manufacturing of Hercules trucks. The Hercules Motor Truck Co. has been organized with a capital of $100,000 as an outgrowth of Stegeman to act as distributor. Adam J. Mayer heads both companies and Lyon S. Pease is secretary and treasurer of both. Fredric Getelman is vice president of the Hercules and Frank H. Parker is vice president of the Stegeman.

**The Kelly-Springfield Tire Co.**, Cleveland, O., net profits in 1917 amounted to $4,323,955, an increase of 30 per cent. over 1916 and after deduction of preferred dividends $12.40 a share on common. A surplus of $1,453,585 remains after reduction of dividends, interest and reserve for sinking fund and profit sharing. This is 50 per cent. more than the surplus of Dec. 31, 1916.

**The Biggam Trailer Corporation**, Corunna, Mich., has received an order from the government for $200,000 order for trailers for the Signal Corps.

**The Detroit Auto Dash Co.**, Detroit, Mich., will occupy its new buildings, which cover a space of 25,000 square feet and are built of brick and concrete. The estimated cost is $55,000. The company expects to double its production, bringing the output to 40 carloads a day.

**The Denby Motor Truck Co.** is adding three new assembly buildings to its plant. The two buildings will be of wood construction and the third will be of steel and concrete. This will give the plant an increase production of 100 per cent. About 10 trucks a day are turned out.

**The Johnstone Tire and Rubber Co.**, Laporte, Ind., will shortly commence operations and has finished equipping its building. The company plans to manufacture in addition to its semi-solid tire a truck tire. W. Mussey, who has been treasurer of the company, has been made president, and E. G. Bird is secretary.

**The Universal Tool and Apparatus Co.**, Milwaukee, Wis., has changed its corporate style to Universal Tool and Appliance Co.

**The Babcock Automobile Spring Co.**, Milwaukee, Wis., has made the arrangements for the erection of a new plant two stories high, with basement 60 by 128 feet. The company will provide a service station, where motorists may have springs replaced while they wait. It manufactures springs for all makes of cars on a patented non-shifting principle.

**The Eagle Manufacturing Co.**, Appleton, Wis., has completed its first shipment of tractors to Italy on an order from the Italian government. The new tractor factory will be completed and will be devoted exclusively to tractor manufacture and the original works to gas engines and other farm machinery.

**The Maibohm Motors Co.**, Racine, Wis., has issued a report covering its progress for the nine months beginning April 1, 1917, when the company became a Maine corporation. Total assets are placed at $434,589.01, and the net earnings for the period were $12,294.17. The company also elected its officers for the coming year as follows: H. C. Maibohm, president; T. W. Cushing, vice president and secretary; W. C. Maibohm, works manager.

**The Clyde Cars Co.**, Clyde, O., during 1917 was very successful with total sales of $1,331,045, yielding a surplus of $41,259. A 12 per cent. stock dividend was declared and plans were outlined for increasing production.

**The Champion Spark Plug Co.**, Toledo, O., manufactured more than 24,000,000 spark plugs during 1917. The company is planning to double its capacity.

**The Hays Manufacturing Co.**, Ionia, Mich., is building an addition to its plant. It will be two stories high and will be used for finishing work. The company manufactures automobile bodies.

**The Winther Motor Truck Co.**, Winthrop Harbor, Ill., has started work on the erection of a new factory in Kenosha, Wis. This is necessary in order to provide facilities for handling a government contract for military trucks. The new plant will be ready for occupancy about May 15, and the company will move there from its present quarters.

**The Linde Air Products Co.**, New York City, has declared a regular quarterly dividend of two per cent. on common stock and 1½ per cent. on preferred stock, payable March 30 to stockholders of record March 20.

**The Four Wheel Drive Auto Co.**, Clintonville, Wis., manufactures between 20 and 25 complete three-ton trucks a day. The government has erected barracks near the factory, where 200 officers and men of the Ordnance Department make their headquarters when receiving instructions in the operation and care of the F. W. D. trucks in the established school of the plant. The course lasts from three to four weeks.

**The Gillette Rubber Co.**, Eau Claire, Wis., is increasing its output from 500 tires to 1500 tires a day. In the near future it is hoped to bring the capacity up to 2000 tires a day.

**The Hawkeye Truck Co.**, Sioux City, Ia., has purchased a five-acre track on which it will build a new factory. As soon as plans are drawn construction work will be started. The building will be 75 by 300 feet and will have the saw-tooth roof style.

**J. E. Bolles Iron and Wire Works**, Detroit, Mich., is making parts for motor trucks. The company recently moved into their new plant and among other things they will make seats and dashes for Liberty trucks.

**The Buda Co.**, Harvey, Ill., is constructing another new building. It will be four stories high and of reinforced concrete with brick walls. This is in addition to putting into full operation a new building devoted to assembling and testing truck and tractor engines.

**The Falls Motors Corporation**, Sheboygan Falls, Wis., has received an order from the Kissel Motor Car Co., Hartford, Wis., for the delivery of 2000 military truck engines.

**The Stewart Motor Corporation**, Buffalo, N. Y., has advanced the price of its three models $100. The three-quarter-ton chassis now sell at $850, the one-ton at $1295 and two-ton chassis at $2195. The Stewart 1½-ton chassis has advanced from $1695 to $1750.

**The R. T. Sales Co.**, Green Bay, Wis., recently organized with a capital of $50,000, plans to operate a chain of tire repair shops in addition to its general jobbing business in automobile accessories. The company will distribute along the important highways of Wisconsin, Minnesota, North and South Dakota, Iowa, Illinois and upper Michigan. It will also act as distributor in Indiana, Illinois and Iowa for the Liberty Tire and Rubber Co. The president is Ben A. Tetzlaff; vice presdent, A. A. Bush, and the secretary and treasurer is W. S. Virgo.

**The Eclipse Manufacturing Co.**, Indianapolis, Ind., has removed from its former quarters in the Meridian building to the Wimmer building. The company will have more room and better facilities for the handling of its Hercules spark plug business.

**The United States Motor Truck Co.**, Cincinnati, O., is building an addition to its plant and will be a three-story brick and steel structure. It will be one-half block square and serve as a testing department, paint and final assembling shop.

**The Kissel Motor Car Co.**, Hartford, Wis., will erect two factory additions to provide extra facilities for the handling of the government contracts for military trucks.

**The Goodyear Tire and Rubber Co.**, Akron, O., is placing on the market a cord patch for repairing inside breaks and injuries in cord tires. The patch is built of several layers of cords, the same construction being used as in cord tires. Edges are tapered to prevent tube chafing and the patch is inserted in the same way as an ordinary blowout patch, the surface in contact with the shoe being skim coated with a layer of uncured gum.

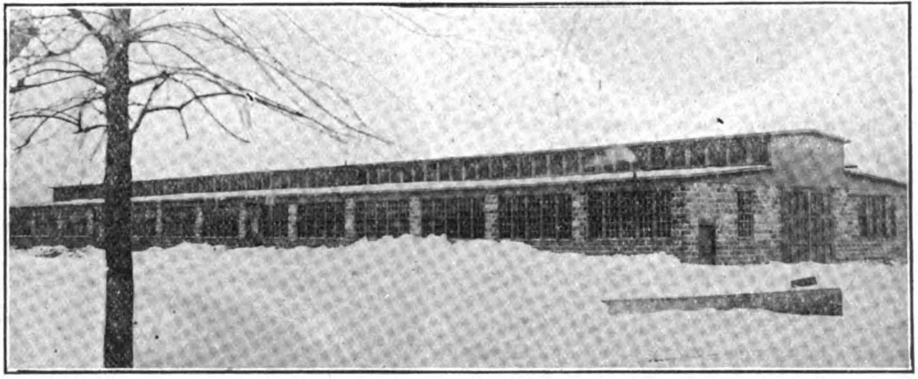
**The Day-Elders Motors Corporation**, Newark, N. J., is bringing out a new five-ton worm driven truck, with a chassis capacity, including the body of 14,000 pounds. The wheelbase will be either 150 or 170 inches and the truck is assembled from standard parts, including a Buda 4¼ by 6-inch L head engine, a four-speed Brown-Lipe gearset, a Savage Arms pressed steel frame nine inches deep and Sheldon front and rear axles. The springs are three inches wide in front and 48 inches long, and rear springs are four inches wide and 60 inches long. The truck has Ross steering gear and solid front tires, 36 by 5 and rear 40 by 6 dual tires. The engine is fed by gravity to a Zenith hot air jacket carburetor.

**Pennsylvania Rubber Co.**, Jeannette, Pa., held a meeting of the board of directors and declared the quarterly dividend of 1¾ per cent. on preferred stock and 1½ per cent. on common stock, payable March 30 to stockholders of record of March 15, 1918.

**H. B. Shontz Co., Inc.**, New York City, distributor and central service station for the U. S. Light and Heat Corporation, Niagara Falls, N. Y., has appointed the following service stations for U-S-L batteries: L. W. Ward Co., 9 Clark street, Paterson, N. J.; Charles D. Murgatroyd, Patchogue, L. I.; Youngs & Co., Newburgh, N. Y.

**The Pierce-Arrow Motor Car Co.** has declared the regular quarterly dividend of two per cent. on its preferred stock, payable April 1 to holders of record March 15.

**The Kelly-Springfield Tire Co.** has adopted a resolution to amend the certificates of incorporation so as to reduce the capital stock of this company by reducing the six per cent. cumulative first preferred stock to the extent of $248,900, divided into 2489 shares, representing the number of shares which the company has purchased for the sinking fund in accordance with the terms of the certificate of incorporation, all of which have already been cancelled. Also to eliminate the provision authorizing seven per cent. convertible second preferred stock, as all of the seven per cent. convertible second preferred stock which was issued by the company has been surrendered to the company for conversion into common stock. The board of directors has called a meeting of the holders for March 12 to take action on the resolution.



Factory Unit for the Indiana Truck Corporation's Plant at Marion, Ind., Built in Two Weeks After Signing the Contract—A Record Accomplishment.

**The Chandler Motor Car Co.**, Cleveland, O., has declared a regular quarterly dividend of three per cent., placing the stock on a 12 per cent. dividend basis per annum. Heretofore dividends have been declared in the form of a quarterly rate of two per cent. and a quarterly extra of one per cent. The dividend is payable April 1 to stock of record March 12. At the annual meeting of the Chandler Motor Co. retiring directors were re-elected with the exception of J. W. Prentiss, who was succeeded by J. A. Fayne. Retiring officers were subsequently re-elected. President F. C. Chandler said: "At the time our country became involved in the war we placed our facilities at the government's disposal and we feel sure our stockholders will all feel a pride in the fact that we will now be able to be of assistance. This work, together with our regular automobile business, will tax our facilities to the utmost. Our automobile business in general is very active, indicating a demand for Chandler cars in excess of our production."

**The Prest-O-Lite Co., Inc.**, Indianapolis, Ind., has appointed the following concerns and dealers as distributors of acetylene products: Thompson Motor Co., Second and Evergreen streets, Durant, Okla.; Ratcliff-Sanders Co., Tulsa, Okla.; C. E. Gates Auto Co., Medford, Ore.; Oregon Motor Garage, Inc., Pendelton, Ore.; Archer & Wiggins Co., Sixth and Oak streets, Portland, Ore.; Vick Brothers, 260 W. High street, Salem, Ore.; I. X. L. Tire and Supply Co., Sixth and Linden streets, Allentown, Pa.; C. C. Kettering, Appollo, Pa.; Wetherill & Henry, Ninth and Edgemond avenue, Chester, Pa.; Way Brothers, 29 S. Third street, Easton, Pa.; Mahlon H. Myers, Walnut and Conemaugh street, Johnson, Pa.; General Auto Supply Co., 117-119 E. King street, Lancaster, Pa.; Motor Supplies Co., 212-14 S. Penn street, Reading, Pa.; Smith & Howley, 250 Wyoming avenue, Scranton, Pa.; W. M. Layton, Sharon, Pa.; Keystone Machine Works, 709 Market street, Sudbury, Pa.; Pusey-Young Storage Battery Station, 17 W. Market street, West Chester, Pa.; Motor Car Supply Co., 151 S. Main street, Wilkes Barre, Pa.; Ideal Auto and Machine Co., 16-18 East First street, La Junta, Col.; R. J. Barr, Troy, Ala.; French Street Garage, 119-125 French street, Wilmington, Del.; The Dublin Buggy Co., 32-36 N. E. Jackson street, Dublin, Ga.; Wheless Brothers, 116 Main street, Thomaston, Ga.; W. Hare & Son, Noblesville, Ind.; Sunnen Motor Co., 221 N. Jefferson street, Mexico, Mo.; Posz & McPike, Helena, Mont.; Nabors-Cole Tire and Battery Co., Frederick, Okla.; J. M. Traser, Sumter, S. C.; Maxwell Sales and Service Co., 219 N. Main street, Waupaca, Wis.

**R. V. Trader & Co.**, McKeesport, Pa., has been organized to manufacture a fuel saving carburetor for trucks. A building has been purchased and remodeled as a factory and limited production is already going on. New machinery will be installed and production increased. Philip Palmgreen is in charge of the factory.

# Activities of Prominent Men of the Industry

## Resignations, Promotions and Other News of the Personnel of Motor Vehicle Manufacturing and Merchandising Companies and Allied Businesses

H. L. McClaren, New President of the Ajax Rubber Co., Inc.

**L. R. Johnson**, for three years auditor of the Jones Motor Car Co., has been elected by the directorate to the office of treasurer.

**J. C. Schmitz** has been appointed district representative of the Dart Motor Truck Co., Waterloo, Ia. Mr. Schmitz will handle sales in Oklahoma and Texas.

**T. J. Foster** is now president and general manager for the Willard Co. of Texas. For many years he was district representative for the Willard Storage Battery Co. at Kansas City, Mo. Mr. Barrett, former manager, has been promoted and is now at the factory.

**Harry L. French**, Kansas City, Mo., has taken over the sale of Apco accessories for Fords for the Southwest and he will call on the jobbers with this line, together with the Badger line made by Auto Parts Manufacturing Co., Milwaukee, Wis.

**Arthur K. Snowden** resigned a partnership in the law firm of Snowden & Snowden to re-enter the motor car field and is now general manager of the Park Automobile Co., St. Louis.

**Charles S. Dahlquist**, formerly engineer of the Timken-Detroit Axle Co., now has charge of axle inspection for the motor transport section of the quartermaster's corps and has been promoted to major.

**Beckwith Havens** is now a lieutenant in the naval aviation service. He was formerly foreign representative of the Denby Motor Truck Co.

**E. C. Morse** has been appointed vice president of the Curtiss Aeroplane and Motors Corporation. He was formerly vice president of the Chalmers company. For some time he was a representative of the Johns Willys interests, including the Willys-Overland and Curtiss company.

**Charles Hatch** has joined the Commercial Car Unit, Philadelphia, Pa. He will devote his attention to selling the Commercial Car Unit Co.'s Truxton truck making attachment. Mr. Hatch was formerly with the Perfection Spring Co. and lately with Parish & Bingham.

**Charles Oostdyke** has been appointed director of purchasing by the Hudson Motor Car Co., Detroit. He was formerly purchasing agent for the Cadillac. In his new position he succeeds A. Barrett, who has become treasurer of the Essex Automobile Co.

**Paul T. Irvin**, who has been associated with the Wells Brothers Co., and the Greenfield Tap and Die Corporation for 12 years, has resigned as sales manager of the gauge division to accept the position of general sales manager of Lincoln Twist Drill Co. of Taunton, Mass. Edward Blake, Jr. (formerly of Wells Brothers Co.), is vice president and general manager of this company, and Frank O. Wells, president, and Frederick H. Payne, vice president of the Greenfield Tap and Die Corporation, are directors.

F. W. A. Vesper, President of National Automobile Dealers' Association.

**B. J. MacMullen** has been appointed sales manager of the Chevrolet Motor Co., Flint, Mich., taking the place of John S. Collins, who has resigned. Mr. MacMullen was sales manager of the company in Texas. J. W. Hawk, assistant to the sales manager of the Chevrolet company of New York, has been appointed sales manager of the Chevrolet company of Texas.

**Samuel Schary** has been promoted from salesman to sales manager of the H. A. Sanders Corporation, New York City, dealer in Case automobiles.

**F. H. Holden** is now research engineer of the Cadillac Motor Car Co. He was formerly in the airplane engineering department of the Signal Corps at Washington.

**Owen Moynihan** has been appointed general sales manager of the Amazon Rubber Co., Akron, O. Mr. Moynihan was formerly manager of the New York branch of the Amazon company.

**A. C. Webb** has been appointed district sales representative of the Fulton Motor Truck Co., with headquarters at Atlanta, Ga. He will have charge of sales in seven states.

**V. G. Kropf** has been elected commissioner of the Tri-City Automobile Trade Association and will devote his entire time to looking after the interests of the dealers in Rock Island and Moline, Ill., and Davenport.

**Henry H. Hower**, manager of the Willys-Knight division of Willys-Overland, will take the management of the large plant manufacturing navy supplies at New London, Conn. His change of position will be for the duration of the war, after which he will return to his former position.

**R. F. Jackson**, formerly assistant sales manager of the Zenith Carburetor Co., has been appointed sales engineer, succeeding P. E. Miquelon, who has been placed in charge of the Chicago branch. R. H. Taylor, former manager of the Chicago branch, has succeeded V. I. Shobe as manager of the New York branch, who recently was appointed sales manager of the Zenith company.

Elmer Apperson Retires from Active Management of Automobile Business He Founded 25 Years Ago.

**J. Welch**, formerly associated with the Abbott Motor Co. and the Inter-State Motor Co., has been appointed western manager for the Fruehauf Trailer Co., with headquarters at Kansas City, Mo.

**A. E. Barlow** has been appointed sales manager of Moto-Meter, Inc., and will have his headquarters at the factory at Long Island City, N. Y. In the past Mr. Barlow has been sales manager for the Ever Ready products and Rayfield carburetor.

**F. H. Burdette** will have charge of truck sales for the Hercules Motor Truck Co., Milwaukee, Wis., on the Pacific coast. He was formerly Pacific coast manager of the Four Wheel Drive Co. and before that eastern representative for the Stewart trucks.

**A. M. Robbins** is now manager of the branch of the Chalmers Motor Co. in New York City. Mr. Robbins was formerly at the head of the Centaur Motor Co., Chalmers dealers in Chicago.

**Major Harry Shepler** is now in charge of production of the aviation section of the U. S. Signal Corps, and makes his headquarters in Cleveland. Major Shepler was formerly head of the Willys-Overland production.

**Loyall A. Osborne** of New York, vice president of the Westinghouse Electric and Manufacturing Co., and chairman of the executive committee of the National Industrial Conference Board, has been appointed by the secretary of labor a member of a committee on industrial peace during the war. This committee, which consists of five representatives of employers, five labor leaders and two public men, will provide a definite labor program in order that there may be industrial peace during the war, thus preventing interruption of industrial production vital to the war.

**J. F. Bowman** has been made general manager of the Acason Motor Truck Co., Detroit, Mich. He will retain the position of vice president. Mr. Bowman was formerly with the Federal Motor Truck Co. H. A. Conlon, who was at one time assistant to Mr. Bowman in Federal affairs and more recently assistant sales manager in Acason interests, has been appointed sales manager.

Edgar Apperson, General Manager of the Apperson Brothers Auto Co., Kokomo, Ind.

**Henry W. Johnson** has been appointed superintendent of the foundries of the Theisen-Braithwaite Co., Inc., at Port Huron, Mich. He will direct the company's work of manufacturing gray iron castings for automobiles. In the past Mr. Johnson was general manager of the Fairview Foundry Co., Detroit, Mich.

**C. S. Pope**, formerly in the engineering department of the Dodge Brothers, has been appointed chief engineer of the Elgin Motor Car Corporation, Chicago, Ill.

**F. D. Norman** is now factory manager of the Springfield plant of the Bosch Magneto Co. For a number of years Mr. Norman has been with the Bosch interests, coming to Chicago from Toronto.

**Frank E. McDonald** has been appointed a district sales manager of the Saxon Motor Car Co., Detroit. Before entering the light car field Mr. McDonald was wholesale manager for the Mabbett-Bettys Motor Car Co., Rochester, N. Y., as the distributor of Cadillacs.

Maj. C. B. Amorous, Formerly Purchasing Agent of the Locomobile Co.

**G. D. Yaeger** takes the position as general manager of the Wagner Axle Co., Anderson, Ind. H. P. Harding has resigned as president and general manager.

**W. K. Frederick** is now sales manager of the Gryphon Rubber and Tire Corporation, New York City. Mr. Frederick is well acquainted among the accessory jobbers formed from his association as assistant sales manager of the Batavia Rubber Co., and as representative with both the Pennsylvania Rubber Co. and the McGraw Tire and Rubber Co.

**G. H. Proctor** has joined the Henley-Kimball Co., Boston, Mass. For the past three years he was connected with the Mitchell agency in Boston and prior to that was agent for the Stanley car and erected one of the first automobile buildings on Commonwealth avenue.

E. E. Vreeland, President, Abbott-Downing Truck and Body Co., Concord, N. H.

**Norman G. Wilson**, formerly manager of the Packard branch at Bethlehem, Pa., has been appointed as sales manager of the Stanley branch at Philadelphia, Pa.

**R. W. Mickam**, formerly advertising manager of the Liberty Motor Car Co., has joined the Carl M. Green Co., advertising agency, Chicago.

**P. D. Sampsell** has been placed in charge of sales of United States trucks in Indiana, Ohio and West Virginia. His headquarters will be in the Severn Hotel, Indianapolis, Ind.

**Millard N. Newton**, for five years connected with the advertising department of the White Co., Cleveland, has been appointed advertising manager.

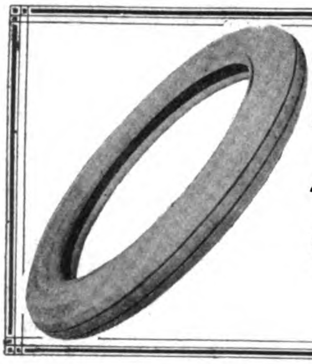
**J. B. Howell** has entered active service in the United States Army, and is now training at Camp Dix. He was formerly in the sales department of the Bound Brook Oilless Bearing Co., Bound Brook, N. J.

**E. K. Conover**, formerly of the windshield department of the Paige Steel and Wire Co., is entering the windshield department of the Zenite Metal Co., Indianapolis, Ind.

**I. D. Landis** has assumed his new duties as sales manager of the Elkhart Carriage and Motor Co., Elkhart, Ind. He was formerly advertising manager and director of sales correspondence for the Crow-Elkhart Motor Co.

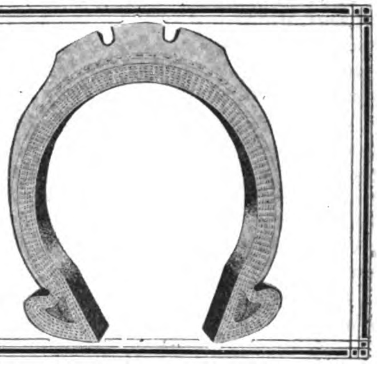
**H. H. Bartlett** has been employed by the General Rubber Co., a subsidiary of the United States Rubber Co., to conduct some botanical experiments on its plantations in Sumatra. Dr. Bartlett is chief of the botanical division of the technical department, which is a part of the plantation organization of the rubber company.

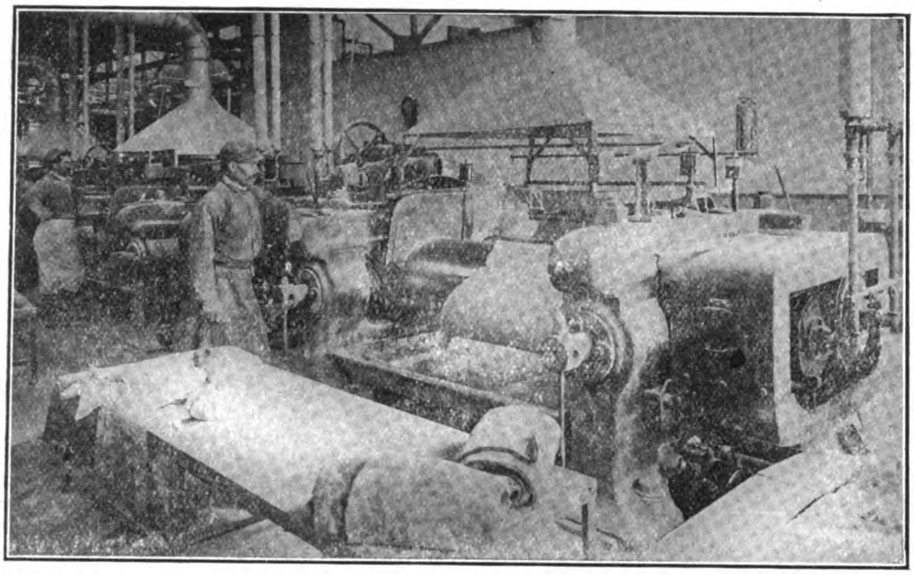
**E. W. Connell**, treasurer and general manager of the Lackawanna Mine and Mill Supply Co., Scranton, Pa., announces that his company will distribute Larrabee trucks in Northwestern Pennsylvania. Mr. Connell's company also represents the Biddle, Scripps-Booth and Monroe passenger cars.



# HOOD TIRES

## *Scientific Production of Highest Quality in Ideal Plant*





**Mixing the Rubber Compounds That Are Used in Making the Treads, Covers and Side Walls of Hood Tires—The Initial Process of the Factory.**

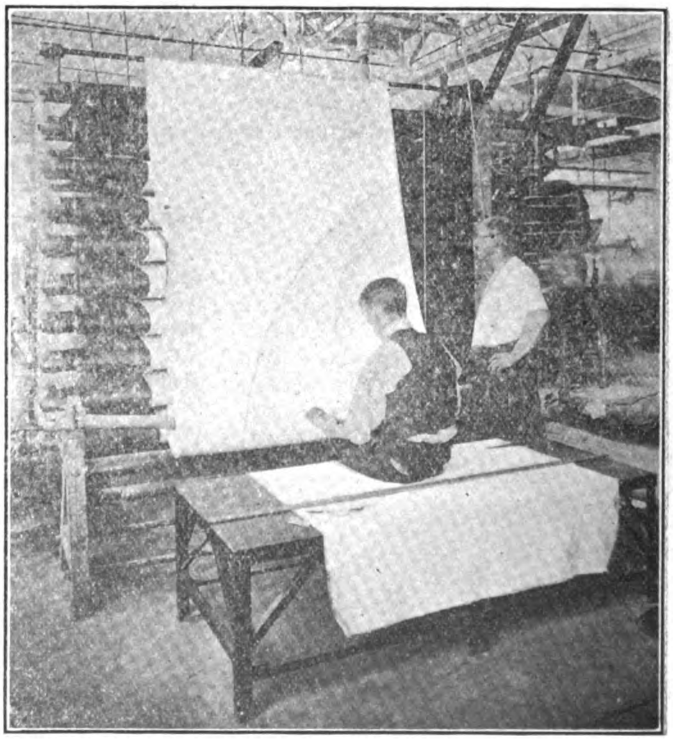
AUTOMOBILE tire making as an American industry has reached very large proportions, the estimate of the National Automobile Chamber of Commerce, which has least approximate figures, that in the year ending June 30, 1917, it produced 18,000,000 tires, valued at $450,000,000, being reasonably conservative. Automobile vehicle builders, during the same period, produced 1,806,194 machines of all kinds. The car and truck registration of July 1, 1917, was 4,242,800, of which probably two per cent. is duplication. With liberal allowance for shrinkage probably 4,150,000 vehicles in round numbers were in use on the date specified, of which 3,750,000 were passenger cars and the other 400,000 were used for freightage. During the last six months the total registration has been considerably increased, but this has not been estimated.

Allowing a set of four tires each for all new cars and trucks, vehicle manufacturers took 7,224,776 shoes, and a liberal allowance for other uses may have brought the total sold to industrial enterprises to 8,000,000. The remainder of the production was for renewals and for stocking dealers and branches of tire makers. Whether the 1918 output will be as large is problematical, but there is probability that it will not be decreased.

The magnitude of the industry probably exceeds the belief of even those well informed concerning it. Some of the concerns engaged in it are very large. These have applied scientific methods, having physical and chemical laboratories for research and experimental work and every necessary facility for perfecting designs and manufacturing processes to obtain tires that shall have greater endurance and longer service life.

Tire design is not in the least uncertain. Form and construction have been determined by careful engineering. The load that is practical for a tire of given size can be very accurately determined, and proportions that afford the best results in laboratory and service are usually produced. Science is applied to tire manufacture as it is to any other highly specialized production, but research is constant because there is a desire to improve the product so far as is possible. There is no reason to believe that tire design can be materially perfected because this has been developed by engineering, as will presently be shown, but without exception every research engineer of the industry is hopeful that he will find what will insure better tire quality through use of ingredients in the compounds of rubber and by new methods of vulcanizing or curing.

With reference to tire design, the basis is the compressibility of air, for the structure must have certain form and strength. Directly upon the content of air, measured in cubic inches depends the resiliency of a tire, and this air content is practically dependent upon the size of the wheel and the rim that is used upon it. The pneumatic tire sizes ordinarily selected for automobile equipment are not determined with the purpose of obtaining the greatest tire econ-



**Inspecting the Fabric: All Cloth Is Examined Before a Battery of Lights to Detect Imperfections That Would Weaken the Tire Structure If Not Rejected.**

omy in service life. Cost of initial equipment is a considerable factor, and the smallest size that will carry the load is usually purchased by the vehicle manufacturer. In some instances shoes that are larger than the average for a given weight of machine are chosen, but such instances are infrequent.

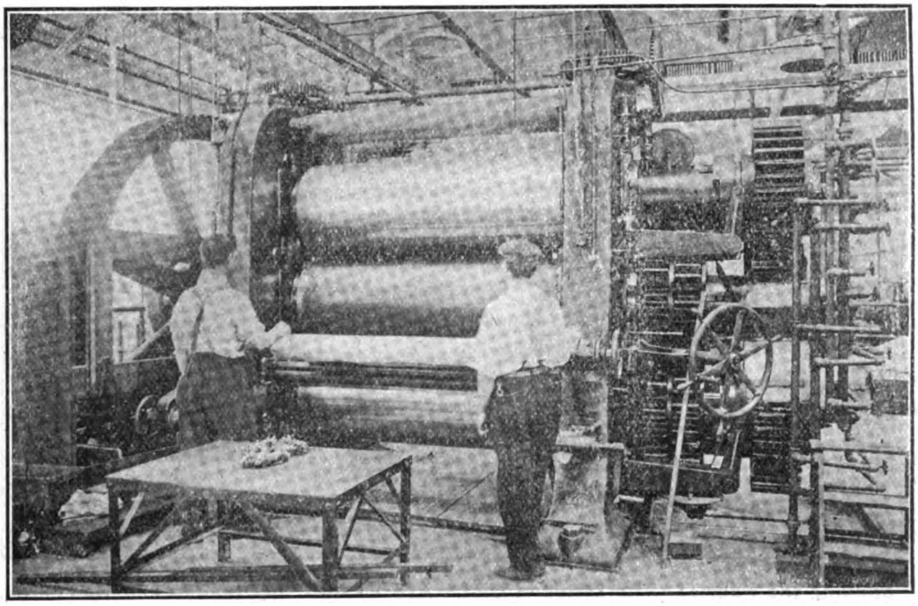
### Oversize Tires Margin of Safety.

As a rule oversize tires will afford much longer service life than sizes that have smaller margin of safety. By this is meant that the larger tire will have more plies of fabric and greater thickness of rubber compound. It will necessarily be stronger and wear longer, and naturally as it is not subjected to anything like the stresses of the smaller tire it will endure practically in ratio to its excess of strength. The oversize tire will cost more, but the service it will afford will be so much greater that the actual expense, based on miles driven, will be less than were a smaller tire used.

Reference is made to oversize tires for the purpose of establishing that service life is dependent upon the strength, the thickness of the structure, the inflation pressure and the load carried, and obviously the construction that will be least stressed will endure the longest. The work that can be done with a tire is very accurately determined by the engineer who designed it, and he can fix limitations for inflation pressure and for load quite as surely as the capacity of any structural material can determine its endurance under weight or pressure of any nature. Not only this, when limitations have been established these should not be exceeded. The buyer who assumes that he can ignore the standards of inflation pressure and load weight recommended by the engineer is as surely inviting destruction of his property as though he cut or punctured or otherwise damaged it deliberately.

### Pneumatic Shoes the Rule.

The pneumatic tire produced by practically all manufacturers is built with a structure of fabric covered with rubber compound, and while some makers are building shoes with diagonally meshed strands instead of fabric, these being the "cord" types, so-called, these are as yet but a comparatively small part of the production of the industry. Cord tires are regarded as having great resiliency, which is claimed to make for ease for occupants of passenger vehicles, but if damaged, and there is no claim that they are not more vulnerable, they cannot be as practically repaired, at least to have the same service value that is obtainable from a fabric structure. The purpose of this article, however, is not to discuss the relative merits of tire types, but to deal with some characteristics of design and to show why tire making is not only scientific, but has been perfected with greater care than is usually given to industrial production.



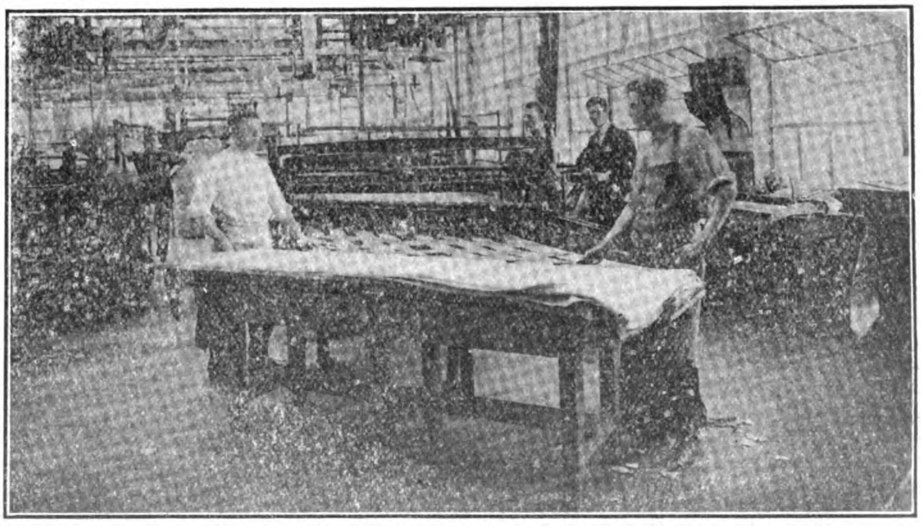
Rubberizing the Fabric: All Perfect Cloth Is Impregnated with Rubber and Then Both Sides of It Are Coated, Making Highest Quality Material Used in Tires.

First of all tire manufacture is engaged in by a comparatively small number of concerns, some of which are extremely large. Tire production cannot be undertaken without machine equipment, which must be specially built, is very expensive and necessitates heavy initial investment. Tire machinery, however, is practically useless without expert knowledge of compounding rubber into grades that will best endure the wear of vehicle service, and equally comprehensive experience in "curing" or heat treating it to obtain the largest measure of strength and resistance to use. Tire manufacturers maintain splendidly equipped laboratories in which chemical and physical tests are made, and these must be operated by experienced chemists and engineers who devote a great deal of time to research and experiment for the purpose of perfecting the quality of the compounds and the methods of constructing and vulcanizing the tires. In addition to the laboratories and their chemical and engineering data, service tests are made, tires being driven under careful observation to determine results from road use.

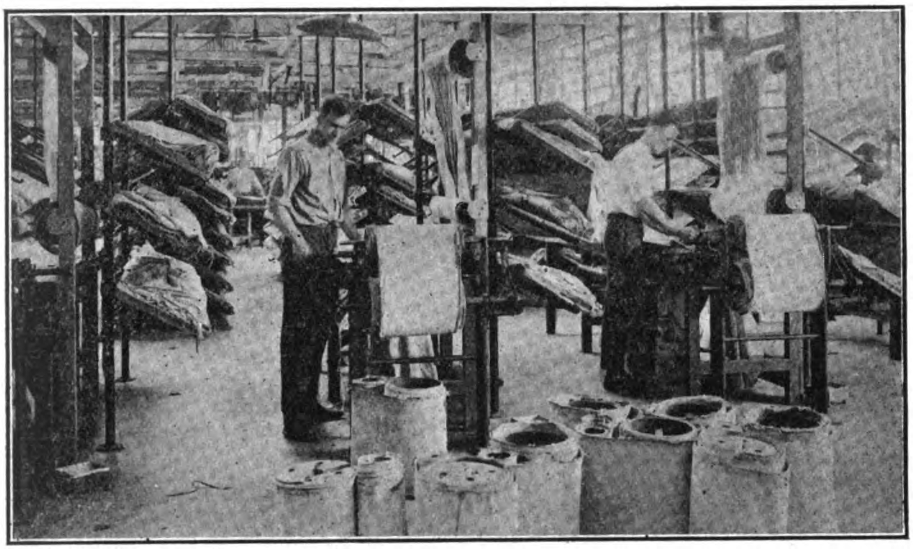
### Importance of Science in Industry.

One will understand that the utmost importance is attached to laboratory and engineering work by all tire manufacturers. Any change of compounds or treatment or methods is first carefully experimented, the tests often extending over long periods of time, so that there is absolute knowledge of results, and their value is positively established before they are accepted as desirable for manufacture. In any event all development is systematic and nothing is neglected that promises a worth while result. A great deal of attention is being directed toward the compounding of rubber and treating it, for there is universal desire to obtain a still greater degree of endurance under wear.

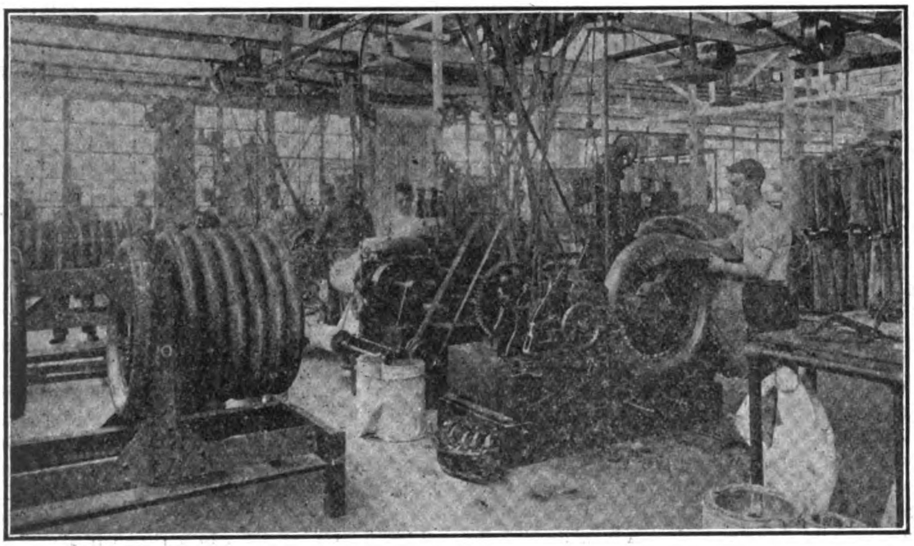
Rubber in its purest state is elastic and can be distorted under compression and it will assume its original form when released. The strength of rubber is dependent upon its fiber, and this fiber is strongest when there is the least volume of any substance that will harden it or lessen its elasticity. Obviously the rubber must be hardened so that it will not distort beyond a certain point



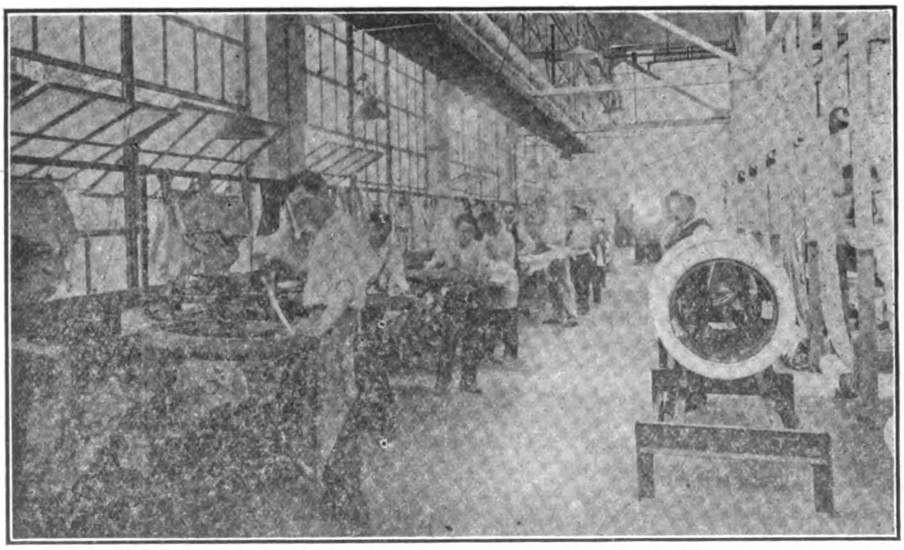
Cutting the Fabric: The Frictioned and Coated Cloth Is Cut Bias to Have the Threads Diagonal Across the Carcass of the Tire, This Insuring Even Tension Upon Them.



**Splicing the Fabric: The Strips of Cloth Are Lapped 1½ Inches and Cemented, and Marked for Length of Piles, Each Roll Containing Sufficient Material for One Tire.**



**Carcass Making: The Tire Is Formed on an Iron Core and the Fabric Tensed Evenly and Gathered at the Beads by Fingers and Rolls, Half the Carcass Being Made Before the Beads Are Inserted.**



**Carcass Covering: After the Carcass Is Formed of Fabric and the Beads Are Enclosed the Tread and the Side Walls Are Covered with Cover Stock of Compounded Rubber.**

under pressure, and rupture or disintegrate when subjected to strains from the application of power at the wheels at the point where they contact with the road or other surface.

### Perfecting Rubber Compounds.

Since pneumatic tires were conceived and built the manufacturers have directed no inconsiderable part of their organization toward improving the quality of rubber as compounded to have greater resiliency and endurance, and while the public may believe that the qualities that are standard are perfection, the manufacturers are very hopeful that much greater improvement is practically possible. But in any event the progression is slow and the results of research and experiment of each individual concern is carefully guarded. As a matter of fact manufacturing processes differ somewhat, and while the general principles are similar, the "compounding" or mixing of ingredients of stock is not known, and is regarded as industrial secrets on which are largely dependent the success of the concern.

The engineering principles, however, are practically standard, and these are applied by engineers to obtain results that are regarded as desirable or sufficient, so that their application is dependent upon the knowledge of the engineers and their experience with the requirements for service.

### Basis of Tire Engineering.

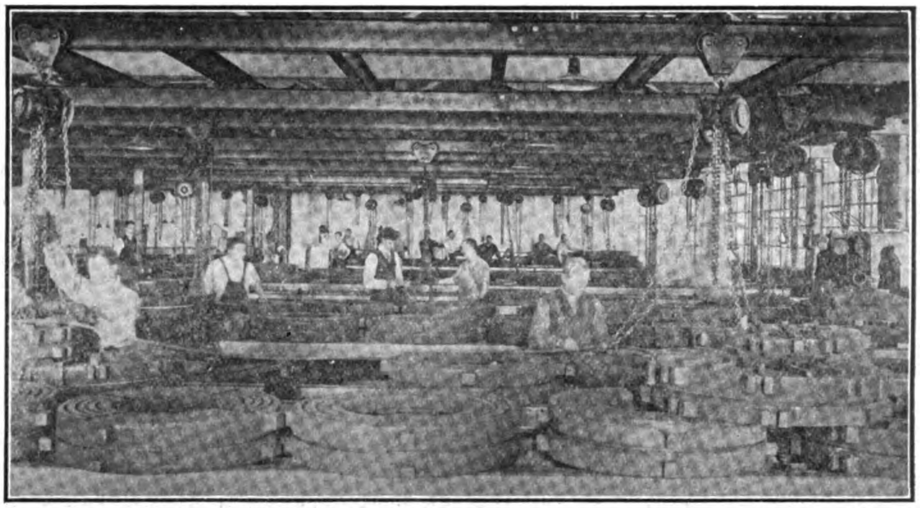
The basis of tire engineering is the use of air under pressure to inflate it, and for that reason two main principles are involved, first, the degree of pressure, which is dependent upon the air chamber or tube, and second, character of construction that will best endure with a given inflation. This applies, of course, to a given size of tire. A tire is usually specified by two diameters, the first of which is the tire diameter (measured across from tread to tread), and the second the section diameter (measured by the width of the tire outside), which is usually expressed as 32 by 4 inches, to illustrate. A 32 by 4-inch tire is intended to fit a rim 24 inches diameter; a 34 by 4 on a rim 26 inches diameter, and so on. Pneumatic tires range in size for passenger cars from 30 by 3 to 38 by 5½ inches. There are in some instances smaller or larger sizes, but these are not ordinarily used.

The tire size depends upon the wheel rim, for the cross section diameter cannot, with a given width of rim, exceed a standard figure, because excess width will project so far that under load the tire will be cut by the rim. If the tire had greater depth than width, when compressed under load the sides would project on either side of the rim. The limits of cross section diameter with reference to a given tire diameter are exceedingly close. For this reason the width and height of the cross section being limited, the air content, measured in cubic inches, is similarly restricted. As the tire is compressed under a load the pressure is distributed equally on all parts of the tube, and assuming a given load the pressure upon the tube is in ratio to its size. The air content is determined by multiplying the square inch area of the inside cross section of the tire when placed on the rim by the circumferential length at the centre of gravity, which is approximately the centre of the tire. Generally speaking practically all tires have about the same air volume for a given size of rim.

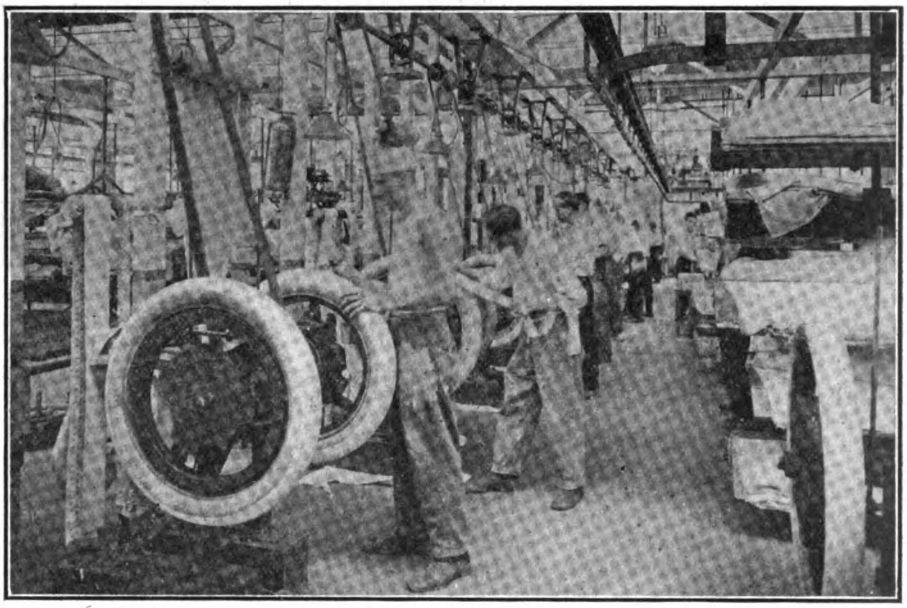
The tire inflation pressure is determined by inflating it to varying pressures and subjecting it as inflated to varying loads and noting the compression as indicated by the area of the tread contacting with a surface. This can be done with the tires on vehicles, but it is usually done by mechanical means so that there will be no variance. From these results graphs may be made that will show exact data for inflation pressure. The tire will expand to a perfectly round cross section under pressure, because the elastic air expands equally in all directions and the contact area will depend entirely upon the load. The less the air pressure the greater the contact area. Varying the inflation pressure or varying the load will vary the contact area, but obviously there is but one standard by which the inflation pressure can be determined with any degree of certainty.

The manufacturer fixes a maximum pressure for inflation, which has been determined very carefully. There is a limitation to the load that can be carried on a given tire. The side walls of the tire will flex under load and it will become flattened. If the width of the tire under the wheel exceeds by 10 per cent. the width of the tire on top of the wheel the load is greater than can be carried in safety, that is, with regard to the endurance of the shoe. By this is meant that if a tire has a cross section diameter of 3½ inches and it measures under a given load where it contacts with the road not more than 3 27/32 inches, it is not loaded beyond the limit of safety, but if it measures 3 28/32 it is too heavily loaded. In such an event, there would be two courses open, the one to increase the inflation pressure until the cross section measured less than 3 28/32 inches, or to reduce the load until the same result were obtained. But if the maximum inflation pressure has been reached there is no alternative than to lessen the load upon the tire until the width of the cross section carrying the weight is 3 27/32 inches.

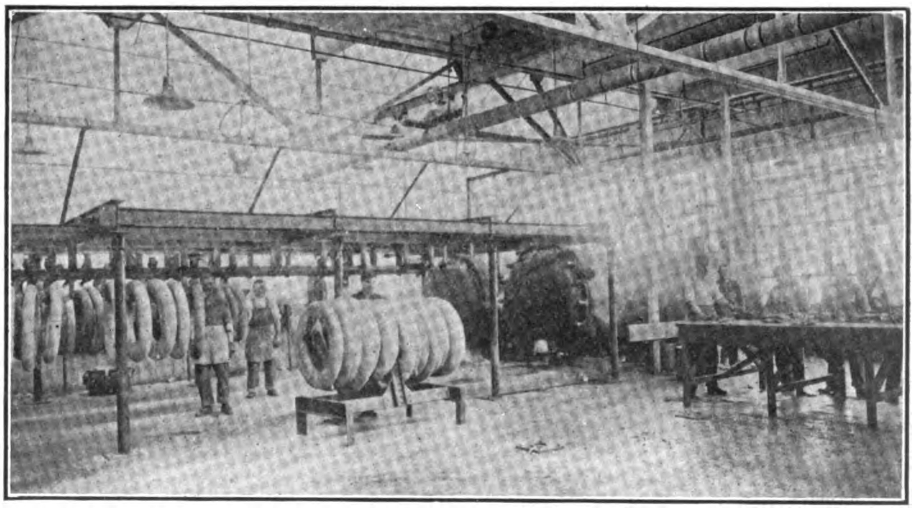
The reader should understand that all tire engineers agree that the load carried by a shoe inflated to maximum should not increase the width of the cross section carrying the load more than 10 per cent. The figures quoted in the illustration are the nearest that can be given in inches without the use of decimals. Obviously the exact measurement would be .35 inch, and 11/32 inch, which has been stated as the limit, is .34275 inch, which is approximately correct. The reader should also understand that innumerable tests and experiments have proven that this 10 per cent. increase of width of tire cross sec-



First Vulcanizing: When Covered the Carcass Is Placed in a Mould the Exact Shape of the Tire Without Tread and Vulcanized at a Temperature of 286 Degrees to Completely Consolidate It.



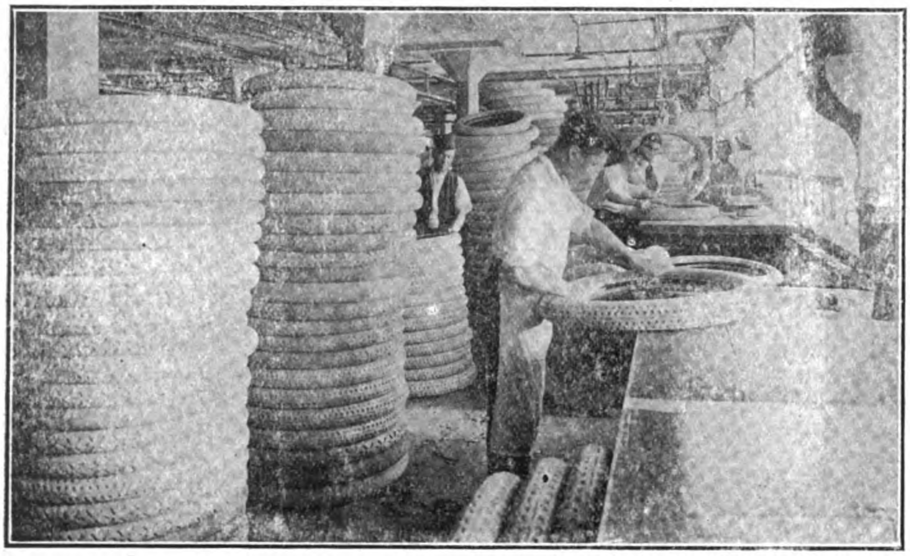
**Treading: Following the First "Cure" or Vulcanizing the Tread Is Carefully Applied with Cement Without Stretching, the Ends Being Joined, This Being the Last Construction Work.**



**Second Vulcanizing: The Tire, with the Tread Wrapped with Canvass by Machine Is Given the Second "Cure," Which Unites the Rubber Covering the Carcass Into One Piece.**

tion is the maximum, that if this width is exceeded the side walls may be rim cut and there is strong probability that the fabric, which is impregnated with rubber and held by the compound covering it, will be broken. These results will follow in any event a continued use of the tire that is overloaded.

While the tire structure as a whole will yield and flex when inflated to maximum, it is protected by the air content which prevents the side walls bending so sharply that the fabric will break. A 30 by 3-inch tire will have an air content of about 400 cubic inches, a 30 by 3½-inch tire 545 cubic inches, a 34 by 4-inch tire 745 cubic inches, a 36 by 4½-inch tire 1000 cubic inches and a 38 by 5½-inch tire 1640 cubic inches. This statement is made to show that the cubic inch air content increases very rapidly with the increase of the tire size.



**Inspection: The Final Examination Determines the Quality, for the Tire Must Be Perfect to Pass, and It Is Trimmed and Painted Inside if It Is Up to Standard.**

### All Depends on Air Content.

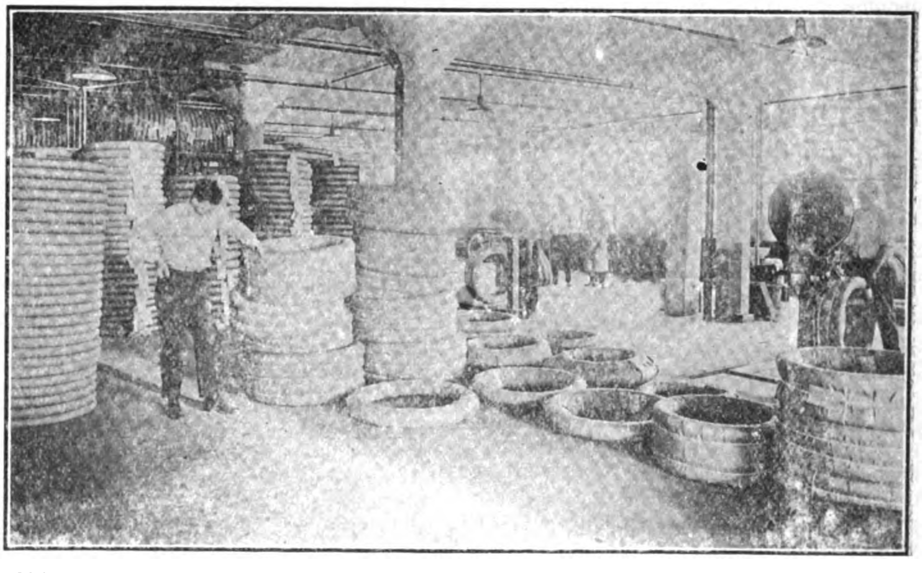
The resiliency of the tire depends directly upon the air content, upon the inflation pressure, and upon the thickness and consistency of the carcass and the tread material. As the air pressure is equal upon all parts of the tire walls it is increased or decreased as the load is varied. The lower the inflation pressure upon the tire, so long as the width carrying the load does not exceed 10 per cent. of the normal width of the cross section, the greater will be the margin of safety. By this is meant that if a maximum inflation pressure is fixed at 80 pounds, and this can be reduced to 65 pounds and the cross section carrying the load not exceed by 10 per cent. the normal width of the tire, the vehicle will ride easier and there will be a very material reduction of the stresses upon the shoe. The greater the inflation pressure the more the resiliency is reduced.

At this juncture emphasis may be made upon the use of oversize tires, or shoes that will not be loaded to capacity. These will have excess resiliency because they are not inflated to maximum, and they will endure longer because they are stronger structurally. So long as they are used with sufficient air pressure that the static load upon them will not compress the cross section contacting with the surface so that the width is more than 10 per cent. of the normal diameter there can be no danger of damage from rim cutting or breaking of the fabric of the side walls. In other words, the tire that is not loaded to its capacity can be used with reduced air pressure, and the standard by which either load or inflation can be determined is measurement of the cross section. This may be made with a caliper or a rule having a fixed jaw about four inches length at one end and a sliding jaw, the reading being made between the jaws in inches or by simple marks that will indicate the normal width of the cross section of the tires of a vehicle and the maximum of 10 per cent. additional.

### Why Tires Are Often Overloaded.

The reason that tires are frequently overloaded is that the manufacturers of vehicles will equip them with shoes that will just carry the estimated load, because larger tires will cost more, and when the equipment is increased, which is very frequently the case, or more passengers than there are seats for are carried, the total weight is excessive. If the tires are driven with reduced pressure the side walls of the tires are excessively flexed. One should remember the tire has very narrow limits of cubic inches air content if it will just safely carry the rated load, and deflation is extremely probable. For this reason frequent examination, preferably with a jawed slide rule, or with a pressure gauge, is not only desirable, but necessary if the owner wants to obtain practical tire economies.

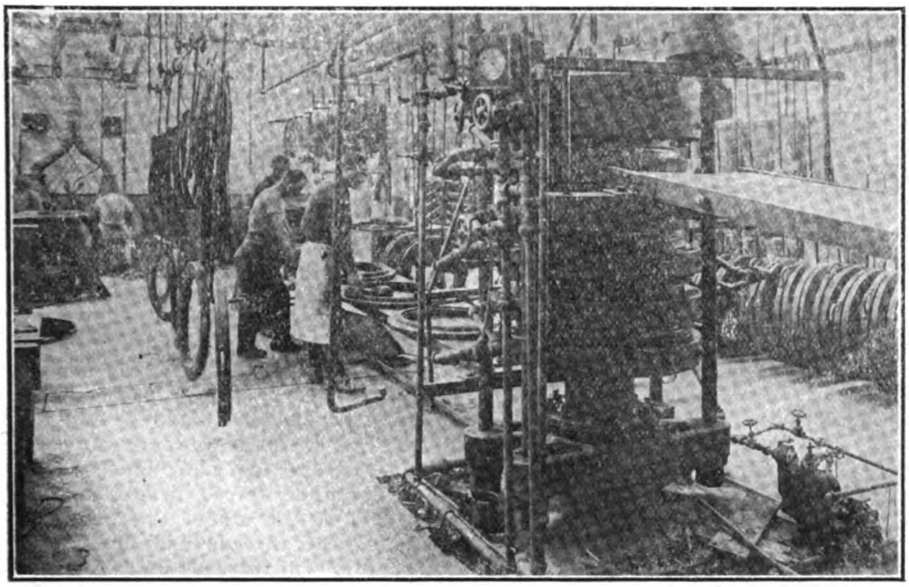
When recommendation is made by the representatives of a tire manufacturer to a purchaser with reference to the capacity of shoes, the uses that can consistently be made with them, how they can be protected and how greater service can be obtained, there is no desire to place limitations on a vehicle owner or driver. The tire engineer knows what is best and he has advised what is told the buyer, simply that the customer will have the greatest degree of satisfaction at the least expense. If the purchaser ignores the advice given he is the loser.



**Shipping: The Perfect Tires Are Sent to the Shipping Room After Inspection, Where They Are Wrapped in Paper, Marked and Stored Until Requisitioned for Shipping.**

### The Ideal Hood Tire Plant.

Statement has been made that tire manufacture is with regard for well established engineering principles. There is no better illustration of the industry than the splendid new plant of the Hood Tire Co., Inc., Watertown, Mass., which is claimed to be the best of the kind in the country. It is not the largest, but the buildings are specially built, all the machine equipment was constructed purposely for the company to produce specific types, and the workers can produce tires and tubes with exceptional economy of time and labor. Much thought was given to obtaining highest grade production so far as machine and tool



Bead Making: The Beads Are Hard Rubber, Some Containing Wire, That Are Made in Standard Lengths by Machine and Go from This Department to the Carcass Making Room.

equipment is concerned, and the sanitation, lighting, heating and arrangement of the buildings for the convenience, comfort and health of the employees were given equal attention.

The design of the tires and the compounding of the rubber and the manner of constructing the shoes have been carefully perfected by the engineers and the laboratory with the purpose of obtaining a very high quality. Claim is made that Hood tires cost more than other makes of shoes, but this higher cost is justified by the materials and the workmanship, while the design insures unusual endurance. The company produces now about 1100 pneumatic shoes and about 1500 tubes each working day, and in another department produces about 150 solid tires for freight vehicles a day. The capacity of the plant is being steadily increased and seemingly the only limitation is the production capacity of the workers.

### Succeeded Shawmut Tire Co.

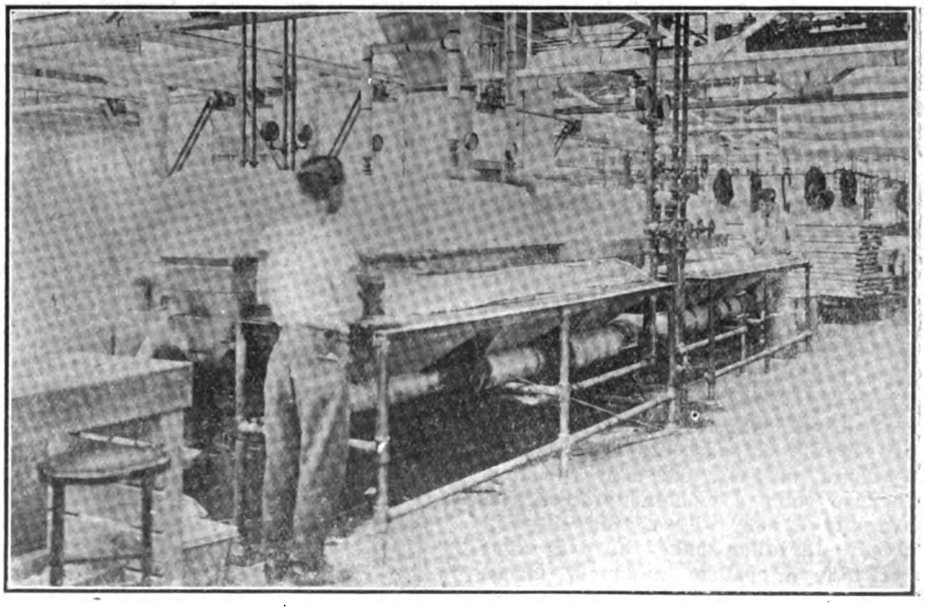
The production of tires was begun in 1906 at the plant of the Hood Rubber Co. by the Shawmut Tire Co. of Boston, which rented space and facilities from the Hood company, and the Shawmut company operated until 1914, when its activities were discontinued. The Hood Tire Co. was organized to succeed the operations of the Shawmut company, but in 1912-3 experimental work was carried on to develop Hood solid tires. Later on attention was directed to pneumatic tires, and so the Hood company practically continued the operations of the Shawmut company, but the products were known as Hood tires. The company developed rapidly and production was so limited by lack of space that the present plant was determined and building operations, begun in November, 1916, were completed in June, 1917.

The plant now occupied is across the Boston & Maine railroad tracks, from the main works of the Hood Rubber Co., and opposite the United States arsenal. The building devoted to pneumatic tire making is fireproof, constructed of brick, stone and steel, with saw tooth roof that is so trussed that there is not a post supporting it and the floor is absolutely clear. The structure is one story for approximately half the length and two stories for the remainder, the floor having an area of about 100,000 square feet. The side walls and one angle of each tooth of the roof are mainly steel sash, so that the interior is exceptionally well lighted. The only partitions are those enclosing the vulcanizing departments, which are separate. The employees have large locker rooms, admirably equipped lavatories and unusual care has been taken to insure a supply of drinking water.

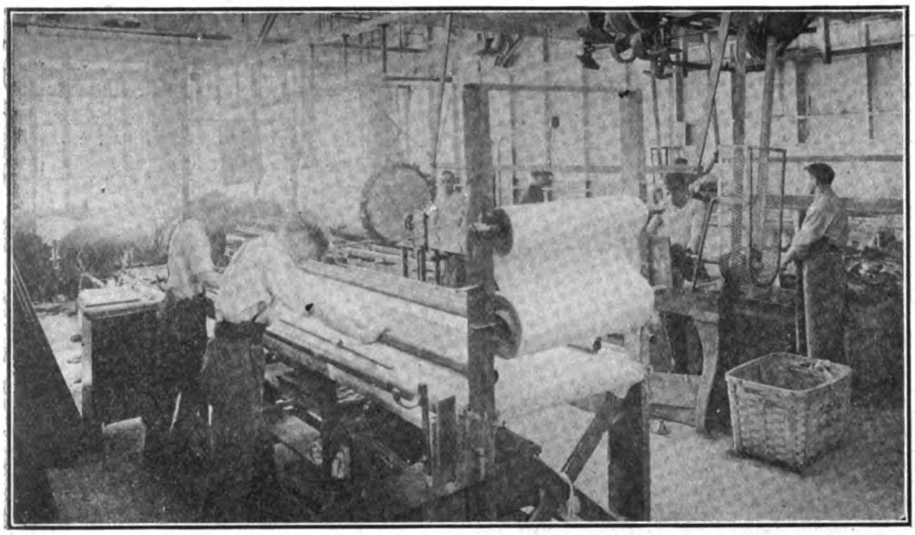
### Production System Is Progressive.

The arrangement of the machinery in the building is progressive, that is, the manufacture starts with the mixing of the rubber compounds and fabric inspection passes successively through the calendaring, fabric cutting, splicing, carcass making and covering to the vulcanizing room (where the first cure is given), and from the tread and bead making departments to the treading department (where the tires after the first cure are finished by the application of the treads), to the vulcanizing room, where they are given the second cure, without rehandling or unproductive work. Following the manufacture the tires are inspected and made ready for the sales department, being sent to the stock room in the basement, from which they are drawn as required by the shipping department, which is in this part of the building. The progressive system means economy in handling and minimized cost of labor as the work goes through the plant, it being delivered by each department where it can be most advantageously worked upon. Beginning with the preparation of the materials, which is followed by the different processes, the work progresses until the tires and tubes reach the shipping department without confusion or unnecessary labor. Much of the machinery operated by the company is used exclusively by it, and a considerable degree of the strength and uniformity of the work is claimed to be due to the machines on which the carcasses are made.

The pneumatic tires made by the Hood company are in two grades, the highest quality being Hood tires and the second grade Puritan tires. These are made both round and "Arrow" tread, the latter being a figured tread intended to minimize skidding. The designs of these tires are practically the same, but the main difference is in the quantity and quality of the materials. The company will begin March 1 the distribution of a new type of the Hood grade, which will be known as "Ribbed Tread," which will have a specially moulded



Tread Making: The Treads Are Formed of Laminations of Rubber Stock in Different Lengths That Are Vulcanized Together, and Are Made Separate from the Carcasses.



**Tube Making:** Sheets of Rubber Stock Are Wound Three Times Around Steel Tubes, Covered with Thin Fabric, Wound Spirally with Tape and Vulcanized by Heating with Steam.

tread of exceptional thickness, which will be divided into three approximately equal sections by two deep circumferential grooves. The tread surface is designed to give the least traction resistance on the road, commensurate with carrying the load. The tire is intended to steer extremely easy on front wheels and coast with the least road resistance, materially saving in fuel consumption. With reference to design the purpose of Hood engineers has been to have what is practically a circle or a round cross section inside of the casing. Claim is made that a tire that will have as nearly as possible the form it must have when fully inflated will endure longest so far as fabric strains are concerned.

### Quality of Hood Materials.

Hood tires are constructed with fabric made to specification that must be rigidly complied with, of Sakellarides cotton, and while this has strength of 390-430 pounds to the square inch as it is delivered from the mill, it will in the completed tire have a strength of about 242 pounds to the square inch. The fabric, which must be absolutely free from moisture before it is frictioned, will lose from 38 to 43 per cent. in strength when dried. By strength in pounds is meant the weight that will cause the fabric to break. Much care is taken to have the thread tension exact and no cloth in which there are imperfections is used, this insuring uniformity of strength. The cloth is carefully inspected before it is used by reeling it past a battery of lights that will show every defect. The fabric is frictioned which is the process of running it through a machine that forces plastic rubber into all of the voids between the threads, causing them all to adhere together, and then is coated, this also being a machine process that covers each side with a thin sheet of rubber. In other makes of tires after frictioning a coat of rubber is placed on one side only. Thus with Hood tires there is a heavier layer of rubber between the plies of fabric.

The fabric is handled in rolls and these are run through a machine and cut on a bias of 45 degrees into strips of varying width, the cutting being to have the threads extend diagonally in either direction across the tire. In forming the carcasses of the tires the fabric is stretched on the centre or tread of the shoe and is gathered together at the beads so as to cover the entire section and have as nearly even tension as is possible. The sections of fabric are spliced with laps of 1¼ inches into lengths that are sufficient to make the number of plies required for a given size of tire, the cloth being wound around the carcass circumferentially. Each strip is marked for the exact length of each layer or ply and each roll of fabric will make one casing.

### Extra Fabric in Hood Tires.

Hood tires are built with one extra ply of fabric, as compared with other makes, for the 3, 3½, 4 and 4½ inch sizes, two plies for the five inch and three plies for the 5½ inch. The number of plies used for the different sizes are: Three-inch, four plies; 3½-inch, five plies; four-inch, six plies; 4½-inch, seven plies; five-inch, eight plies, and 5½-inch, nine plies. The tire must resist the initial inflation pressure, the increased pressure from the weight of the load and the variable pressure from contact with road obstructions, and, theoretically, the greater the number of plies of fabric the greater the strength. The Hood tire is claimed to have not only the strength of the best fabric obtainable, but that of the added plies of fabric.

The limit in number of plies of fabric that can be used is the cross section size of the shoe. As the side walls of the tire are stressed under a load the fabric should follow the arc outward, but if there are too many plies the inner ply will be forced inward by the shortening of the arc of the wall, and eventually the threads will break, and this rupture will increase until the shoe is so weakened it will blow out. As the size of the cross section is increased the number of plies can be increased without danger of breaking the fabric. Hood tires are claimed to have the largest number of plies that long service experience has demonstrated can be used safely, and for that reason have extreme strength.

### How the Carcasses Are Made.

The carcasses are made on sectional iron cores the shape of the insides of the tires, the fabric being applied under tension from rolls on drums to the cores, which are turned on hubs as are wheels. The fabric is applied to either side of each core and as it is wound from the reel on to the core fingers, exerting a pressure of about 250 pounds force the sides of the strip toward the beads, and rolls thoroughly compact the edges on the beads. The fabric being marked and the worker not being allowed to vary more than ¼ inch from these marks exactly registering, the plies are uniformly applied and the tension on each thread is the same. The beads are hard rubber compound, those for the detachable types having wire extending longitudin-

**Tube Buffing:** After the Tubes Are Vulcanized They Are Removed and Buffed by Machines to Have the Familiar Finish, So That There Will Be No Possibility of Wear from Friction in the Shoes.

ally to afford strength, which are wrapped with the middle ply of fabric, the cores being removed when half the fabric has been applied to install the beads.

The cushion (the rubber compound covering the fabric along the tread) and the side cover are next applied. These are prepared by machine and are put on without tension. As Hood tires are made with the two-cure process the carcass is then placed in a vulcanizing mould, which is separable and in which is a cavity the exact size of the tire without the breaker strip and tread. The mould is placed in the pit in which it is heated to a temperature of 286 degrees by steam and the halves are forced together and kept in contact by a hydraulic ram under 350 tons pressure. The heat causes the rubber stock to soften and become semi-fluid and it expands with great force, sometimes exuding between the halves of the mould, and by this pressure the rubber and fabric are firmly consolidated. With this process there is no movement of the fabric during the vulcanizing and the original form is unchanged, so that the stresses are equal upon the plies and the carcass has its full strength.

### How the Shoes Are Finished.

When the vulcanizing for the first cure is completed the casings are roughened and breaker strip, which is fabric frictioned and covered with rubber on either side, is cemented on. Over this is applied the tread, which is a single section of rubber compound that was built of a number of sheets of stock consolidated by vulcanization. The tire is then wrapped with strips of heavy canvas by machine, which hold the breaker strip and tread firmly against the carcass. The second cure is given when the wrapped tire is placed in a vulcanizer and heated by live steam to a temperature of 286, the heat expanding the compounds and rubber so that they become plastic and thoroughly unite from the pressure of the wrapping of canvas. The second cure is followed by trimming, cleaning, inside painting and final inspection.

As the work goes through the plant, from the selection of the rubber for the compounds, and examination of the fabric, inspections are very frequent to see that no defects have been developed.

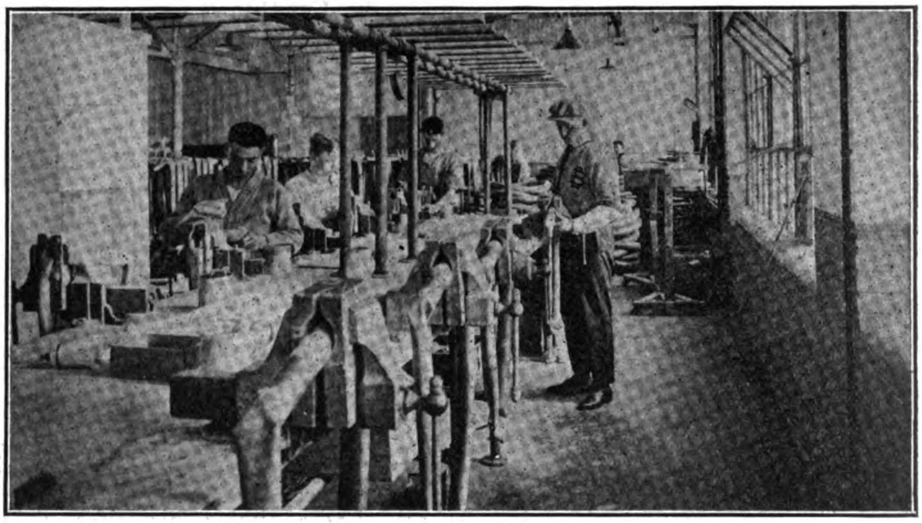
Hood tubes are made of either red or gray rubber calendared to a definite thickness and wide enough to be wound three full turns around a steel tube, with reinforcements for the valve bases. The tubes and the turns of rubber are covered with a jacket of thin cloth applied lengthwise, and the whole is wound spirally with tape, the windings overlapping. The tube is then placed in a vulcanizer and heated with live steam, which consolidates the rubber sheets. After removal from the vulcanizer the rubber tubes are removed, measured and cut to length. The valve and fittings installed and the ends spliced by acid process.

### Hood Solid Tires Have Same Standard.

The description applies to pneumatic tires, but the Hood solid tires, which are made in another plant, equally well designed and equipped for the work, are built on steel base bands that are grooved and cut under, a layer of hard rubber being vulcanized into the grooving. The hard rubber is placed in the bands in sections and consolidated by vulcanizing. On this base the rubber is wound circumferentially in long strips that are cemented together. The sides are trimmed to the required form, that of the American type decreasing in width from the inner edges of the band flanges to the tread which is flattened. The European type is very nearly semi-circular in form, having greater width and depth than the American.

After the tire has been made by winding the rubber on and it has been trimmed to form, it is vulcanized in a sectional mould, the halves of which are retained under hydraulic pressure of 1500 tons, the rubber compound expanding under the heat of live steam at 290 degrees and becoming practically one piece. The rubber must be perfectly unified to obtain the desired resiliency and endurance, and the degree of compression that insures this unity may be best judged from the extremely high pressure. The tire differs in this respect very much from those that are made of a section formed to shape under comparatively light pressure and lapped and cemented, and the grain of the compound, upon which depends very largely its strength, is an entirely different character than that formed in any other manner. The only difference in Hood tires is in the cross section, that of the European type being larger and having more rubber in it, having greater endurance. The Hood solid tires were first sold on a rental basis, the truck owner paying a definite price for each mile driven. This system has been discontinued and the sales are made direct, as are other makes of tires, and a very significant fact from the viewpoint of the company is that the mileage obtained very much exceeded the guarantee in nearly every instance of use.

The accompanying illustrations are of the operations of the plant of the Hood Tire Co., and they show the manufacture of pneumatic tires progressively. From these the reader may obtain a very good knowledge of the work in every stage, and a clear idea of the equipment necessary for producing high grade shoes.



Tube Splicing: The Final Process in Tube Making Is Fitting the Valves to the Bases and Lapping and Splicing the Ends by Acid Curing, Which Is Practically Instantaneous.

## WISCONSIN AUTO TOP WILL DOUBLE MANUFACTURING SPACE.

The maintenance of high quality standards in products has always brought its reward to manufacturers and with their integrity unquestioned they enjoy a steadily increasing demand from year to year for their products, which means constant expansion of their business and production capacity. This first principal of good business has always been adhered to by the Wisconsin Auto Top Co. of Racine, Wis., manufacturers of the well known and widely used Badger brand of seat covers for automobiles, and their products are enjoying a popularity that has called for further enlargement and expansion of the manufacturing facilities at the plant, and to meet the demand promptly a new factory is being built which will double the present floor space. It is a model of up-to-dateness and will be ready for occupancy this spring. Efficient system of arrangement of the various departments and the most modern type of equipment will enable the company to maintain its reputation for quality in manufacture and at the same time speed up deliveries.

The company has recently added tire covers and slip roof outfits to its line. The new members of the line are on a par in merit with their other products, as they represent the same acme of quality in material and workmanship.

## AUTO RACING IS RESTORED.

The Contest Board of the American Automobile Association has decided to resume its control of motor racing competitions for the season of 1918.

# *Special Lenses Solve Headlight Problem*

## Many Devices Which Meet the Requirements of the Law to Eliminate Glaring Beams of Light So Dangerous To Night Driving

WITH the coming of spring, when thousands of cars will again line the highways throughout the country, there is nothing more important to the motorists than that they should see that their headlights not only meet the requirements of the laws of the state or various states in which they drive, but that they also meet with the approval of the public in general.

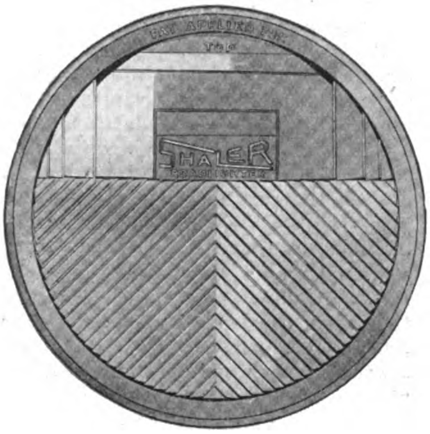
While there will undoubtedly be many prosecutions for violations of headlight regulations, those prosecuted will be among the class who have always stood out against the common rights of the driving public, as well as others who use the roads. This year, as a result of the cooperative effort of motor car organizations, state highway commissioners, traffic commissioners and justices of the court, the majority of car operators will equip their machines with some one of the various types of lenses that not only eliminate glare, but meet other conditions that the driver would expect to be complied with by other motorists. Furthermore, a motorist no longer demands respect who flagrantly disregards the rights of others and he should expect none, as there are a number of lenses on the market which will enable him to meet the expectations of the public, legally and morally, without great expense.

TOP
CORNING CONAPHORE
PATENTS ISSUED & PENDING

The Corning Conaphore.

In summing up the requirements of all the laws regulating the use of headlights it is noticed that the principal provisions are that the direct rays or beam of lights should not extend above 42 inches from the ground at a distance of 75 feet ahead of the machine and should illumine the road on each side for 10 feet at an equal distance from the car. A person with lenses meeting these provisions is at least following the general intent of the law and is on the safe side.

Though many of the automobile manufacturers furnish headlight equipment which conforms with the law, not all of the lights are so equipped, and the operator lays himself open to prosecution unless he furnishes the proper lenses or devices for his car. The same is true of the older cars, equipped before the enacting of headlight laws.



The Shaler Roadlighter.

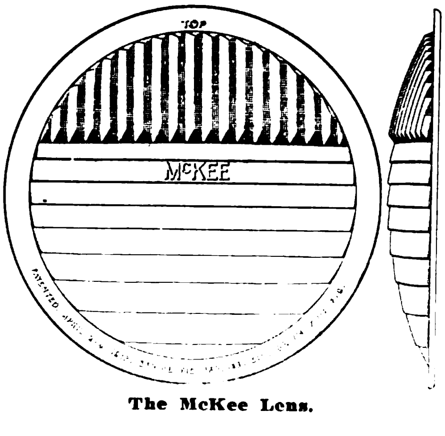
Practically every well known device now on the market is designed to meet the headlight laws of the various states, and the buyer cannot make a mistake, provided he purchases a device which is well known.

Such devices are divided into a number of classes. The first and more extensively used are headlight lenses. By prismatic effects, ribs, stars, beveled edges and other methods the lens breaks up the direct rays which illumine above the 42-inch limit, and refract them to a restricted area.

Devices which are attached to the bulbs of the electric lamps are a second type, which are preferred by many drivers. These devices may either reflect or refract the light as the case may be, and give satisfactory results.

In a class by themselves are visors or screens which absorb or reflect the light after it has passed through the lens. This type of reflector or light regulating device is stock equipment on a few cars.

Still another method of light regulation is had in the tipping of the lights upon the approach of another car. By this means all of the light rays are thrown upon the road ahead, giving sufficient driving light, but no light in the face of the other driver.

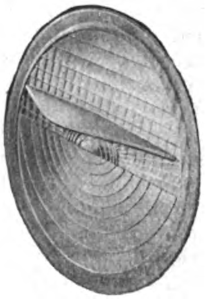


The McKee Lens.

Space will not permit us to mention all of the lighting devices on the market, nor can we give a detailed description of a few, only a general description of each type will be given.

The Conaphore, sold by Conaphore Sales Division, Edward A. Cassidy Co., Managers, Madison avenue and 40th street, New York City, is a typical lens of the first class. This lens is obtainable in sizes ranging from five to 11½ inches in diameter, and in either plain or Noviol glass.

Across the front of this lens are a series of horizontal prisms which refract the glaring beams and direct rays of light downward. A second series of squares, arranged in semi-triangular formation and extending over the centre of the lens, are designed to reflect light toward the sides of the road. All of these prismatic panes are cast into the glass and being on the inside do not collect the road dirt and dust. The front of the lens is perfectly smooth.

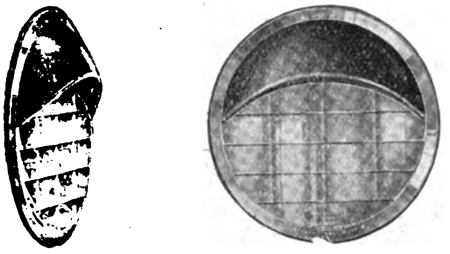


Holophane Headlight Lens.

The Noviol glass, being of yellowish tinge, absorbs the glaring rays of blue and violet and permits only the non-glaring rays to pass. The prismatic arrangement is the same as that of the clear lens.

Protection of the user against the blinding glare of headlights he meets is one of the leading advantages of the Shaler road lighter over headlights with clear glass or other fronts. In addition it enables the user to comply with laws, where they exist, by eliminating his own glare; it illuminates the full width of the road; it throws a more intense light farther ahead than clear glass; it shows the road through fog, rain or dust, and it lights up the road signs as they are passed.

The scientific design of the road lighter accomplishes these functions in a novel manner. Instead of considering the light from the lamp as a single beam which must be wholly diffused to eliminate glare, with the inevitable shortening of range, or which must be limited vertically to the legal height, this de-



**Side and Front View of Macbeth Lens.**

vice divides the light into three distinct beams. These are distributed on the road so as to produce the ideal lighting condition—a long, narrow, concentrated distance beam and two other concentrated beams that give the effect of a pair of regular headlights plus two spotlights set to illuminate the foreground and edges of the road.

The result is that while the distance light is ample for driving at daylight speed, the edges of the road are lighted so intensely that even when meeting headlights that glare one can always see exactly where he is going as he approaches and turns out to pass.

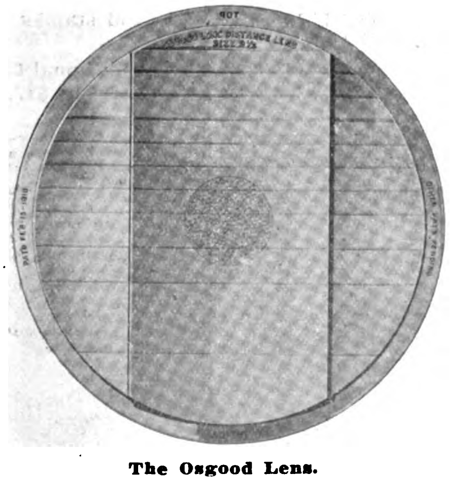
No glare is produced to blind the other fellow and all laws are complied with because all of the light is kept below the level of the lamps.

The accomplishment of these two things put the road lighter among the greatest of safety devices, for unless one can see the road clearly at all times, especially when meeting other cars, all other safeguards lose their power to protect him. It is safe to meet as well as safe to drive behind.

The trade mark of C. A. Shaler Co., Waupun, Wis., prominent manufacturers of accessories for many years, is carried by this new accessory, which meets a ready demand by eliminating the greatest danger of night driving.

The McKee Glass Co. of Jeannette, Pa., put out a product termed the McKee lens, which is constructed on the principle of horizontal and vertical prisms, giving a direct beam of light on the road ahead, limited to 42 inches in height, and with sufficient light to the side to illuminate the curb and passing cars.

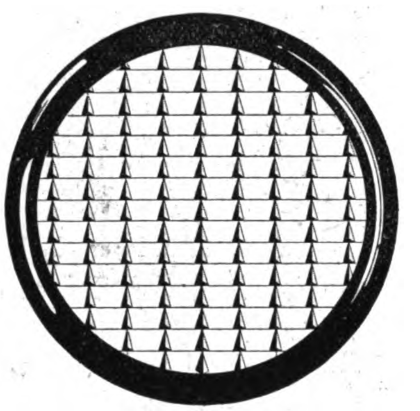
An exclusive feature of the design of the McKee lens is that it is concave-convex. By an arrangement of vertical prisms in a sector across the top of the lens the light which is wasted in a plain glass plate, by being thrown skyward, is turned back on to the reflector and thence through the horizontal prisms. The vertical prisms, at the side of the lens, diffuse the rays of light to the sides.



**The Osgood Lens.**

A lens of unique design is had in the Holophane, made by the Holophane Glass Co., Inc., 340 Madison avenue, New York. Upon the back of this lens is fitted an opaque fin just above the light bulb. The direct rays are prevented from passing from the bulb to the lens. Above the fin the lens is cut into horizontal prisms, which deflect the reflected light from the parabolic reflector downward, and thus reduce the direct glare. Slightly below the centre are a series of curved lines which break up the lens into a number of curved prisms. These curves are so arranged that all direct, as well as reflected light, is thrown directly ahead within certain limits, giving a long distance beam.

Between the horizontal prisms and fin and the curved portion the lens is broken by a series of diagonal lines, for the purpose of deflecting light to the sides. At the centre is a bull's eye refractor prism to control the direct central rays.

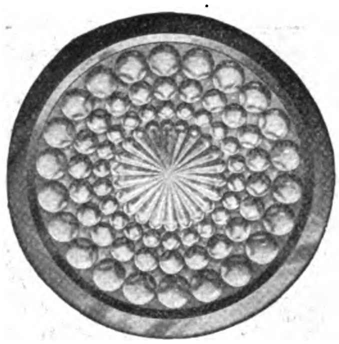


**The Sun-Ray-Lens of the Prismolite Co.**

A headlight lens, known as the Macbeth lens, made by Macbeth-Evans Glass Co. of Pittsburgh, is distinctive in design. The front surface is divided into five horizontal prisms, each of which is inclined at an angle that was determined by experiment. This arrangement is said to direct the light below the horizontal, lighting the path of the car at the greatest distance possible, without having the glare of the lamps blind the driver of an approaching machine. A concave surface at the back of the lens results in the deflection of the rays to the sides. To eliminate any chance for rays to extend upward, the lens is fitted with a green visor, making the whole device ornamental, and, in a measure, protecting the lens from weather.

The Osgood Lens and Supply Co., 2007 Michigan avenue, Chicago, Ill., manufacture a horizontal prism lens. The prisms on this device are of varying widths, the smallest at the top. An arrangement of prisms at the centre cut off the direct centre rays.

In the Sun-Ray-Lens, made by the Prismolite Co., Fourth and Gay streets, Columbus, O., the lens is divided into a great number of small square prisms, designed to throw approximately 90 per cent. of the light directly ahead of the car, in a line parallel with the road surface.



**The Warner Lens.**

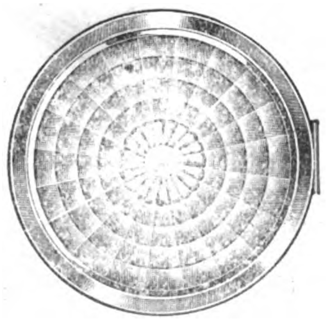
These square prisms are separated from each other by small triangles, through which the balance of the light given by the bulb is refracted to the sides of the machine, at an angle of about 168 degrees, affording light for determining the ditch lines. These lenses are smooth on the outside and offer no projections for gathering of dust and dirt.

The Dillon Multi-Vision Lens, distributed by the National Distributing Co., 240 Oliver building, Pittsburgh, Pa., is a device made with an ingenuously arranged bull's eye placed in the centre, which not only is said to magnify the light, but concentrates and directs it upon the road ahead in parallel lines.

A feature of this device is its projecting face. Extending as it does, beyond the headlight rim, it refracts light to the sides almost at right angles to the machine.

The interior portions of the lens are mottled to diffuse the direct rays from the bulb, resulting in a clear, soft light, of sufficient strength to illumine the road for many feet ahead of the car, in a square path of light.

A popular lens and one that has been adopted as standard equipment by a number of large car manufacturers, is sold by the Warner Lens Co., 914 South Michigan avenue, Chicago, Ill. This lens is very attractive in appearance and being composed of a number of small bull's eye lenses, arranged about a common centre, has a great diffusing effect upon the direct rays of light. It is claimed that this device deflects all of the direct rays and prevents them from extending above the 42 inch limit. Such is the prismatic arrangement that the light is deflected also to the sides of the road, though without glare.



**The More-Lite Lens.**

ACCESSORIES
AND
EQUIPMENT

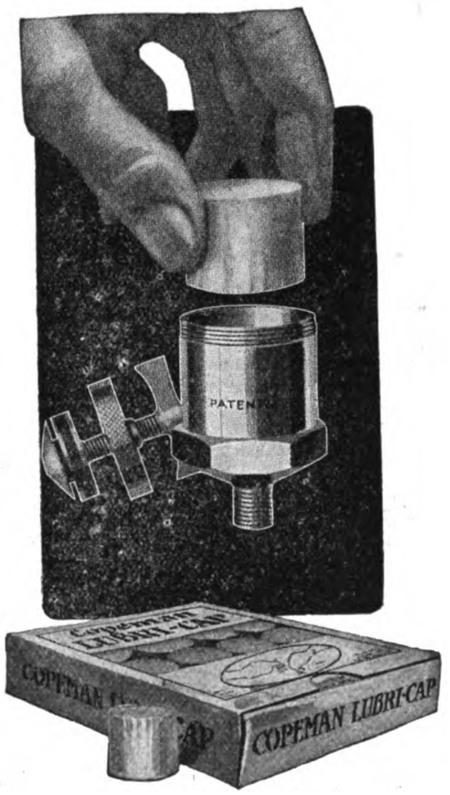
### WRIGHT ROLLER BEARING.

A roller bearing designed for the front wheel spindles of the Ford car, exactly similar to bearings now used for high class automobiles, is being put on the market by a well known company manufacturing roller bearings. This bearing is unique in that it has a cage or retaining mechanism to hold the rolls in the raceways, and it is thereby possible to use more rolls than the conventional type of roller bearing. The makers claim approximate increase of 50 per cent. in the number of rolls possible in the same size bearing.

This bearing has been designed because of the general tendency of engineers toward roller bearings for this particular point in chassis design. As shown in the accompanying cut, it fits the Ford spindle with no mechanical change and presents no more difficulty in installing than the replacement of the present bearings.

**Marketed by the National Bearing Service Co., Philadelphia, Pa. Write for prices and literature.**

### COPEMAN LUBRICATING SYSTEM.



Copeman Laboratories Lubricating System.

From the beginning of the automobile industry engineers have been concerned with the problem of getting a lubricating system that would be satisfactory in the hands of the average motorist—yet 50 per cent. of all car noises are due to bearings worn loose on account of insufficient lubrication. The Copeman Lubricating System is a cross between a grease cup and a grease gun, which not only lubricates the bearings, but cleans them as well, according to the maker's claims. It puts the grease into the bearing no matter how much dirt or grit is clogging the channel.

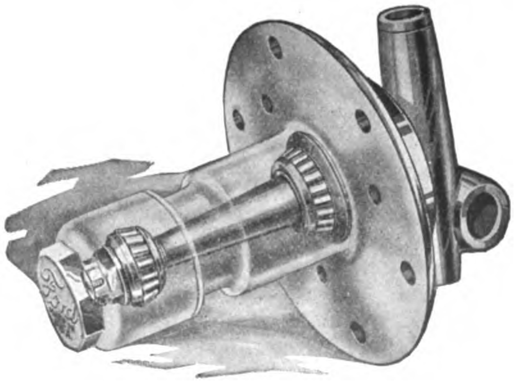
The lubri-cap is a specially manufactured paper capsule with a tremendous tensile strength, containing high grade grease which is placed inside the specially designed grease cup, thereby forming an air tight grease chamber. It is simple to turn the screw and develop a pressure of 750 pounds to the square inch. The empty capsule is automatically removed by the plunger after all the grease has been forced into the bearing.

**Manufactured by the Copeman Laboratories, Inc., Flint, Mich. Write for prices.**

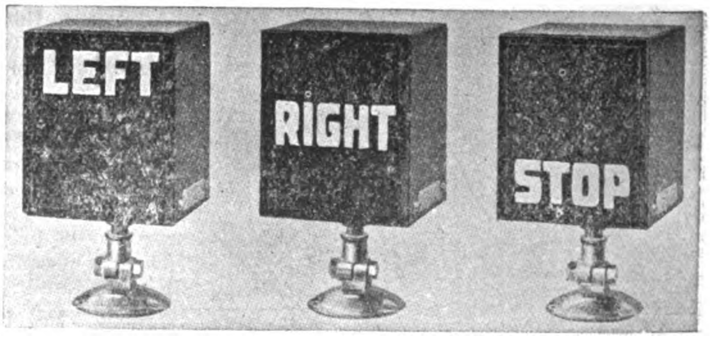
### SMITH AUTO SIGNAL.

A practical and efficient automobile safety device is the Smith Auto Signal. One signal box only is placed on the left rear fender or mudguard (or panel or body in the case of commercial vehicles and trucks) by an adjustable nickel flange. This signal shows, left, right or stop on two sides, i. e., both to the front and to the rear. The left rear fender, as is easily seen, is the logical place for the signal, as it is seen by all cars following from the rear or cars approaching from the front. This signal shows both night and day. It operates from left, right, or stop only at the will of the driver, from a single handle, three-way switch attached to the steering shaft at the tip of the fingers, or in any other place most accessible to the driver. It indicates to the drivers in the rear what direction a machine ahead will take at an approaching cross road or junction before the turn is made, leaving no excuse for a rear end collision or accident caused by a car behind attempting to pass the car in front when the latter is about to make a turn. The Smith signal is not in the experimental stage, but is already in use on many cars and is giving satisfaction. The tell tale buzzer in the switch tells that it is performing its function. Each signal comes complete with switch, buzzer enclosed in the switch, sufficient weather proof wire, tape and staples for installation.

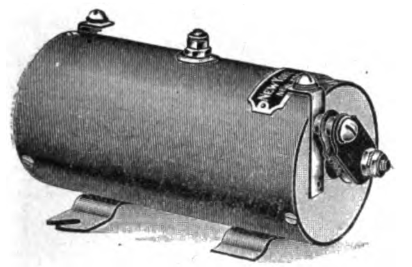
**Manufactured by the Smith Signal Corporation, New York, N. Y. Price, $17.50.**



Wright Roller Bearing Designed for the Ford Car.



The Smith Auto Signal That Shows Night and Day.



## NEW YORK TRANSFORMER COIL.

The inferior quality of much of the gasoline that is marketed today for use in motor cars has made imperative the use of the most efficient ignition systems in every respect, as without a very powerful and infallible spark it is practically impossible to obtain ideal engine operation. To meet this new requirement a specially designed spark coil has been placed upon the market by the New York Coil Co.

These coils are interchangable with any supplied on all modern battery ignition systems. They produce a hot flame at all engine speeds on a minimum amount of battery energy. Operating on very low voltage they mean getting away from starting troubles that have been attributed in many cases to the inability of coils to supply a sufficiently powerful spark at the instant of starting, as at this time the starting motor's drain on the battery is so heavy as to reduce the voltage in many instances to four volts or less. The condenser is of the proper construction to insure long life of contact points in the distributor and they greatly lesson the spark at contact points in the distributor, thus making adjustment necessary only at long intervals.

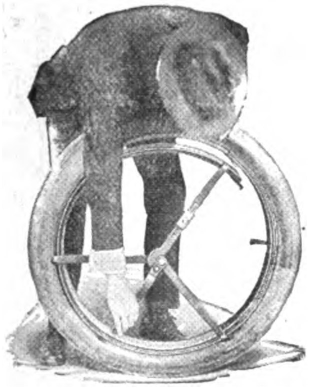
**Manufactured by the New York Coil Co., New York, N. Y. List price on all models, $9 each.**

## THE LAWCO RIM TOOL.

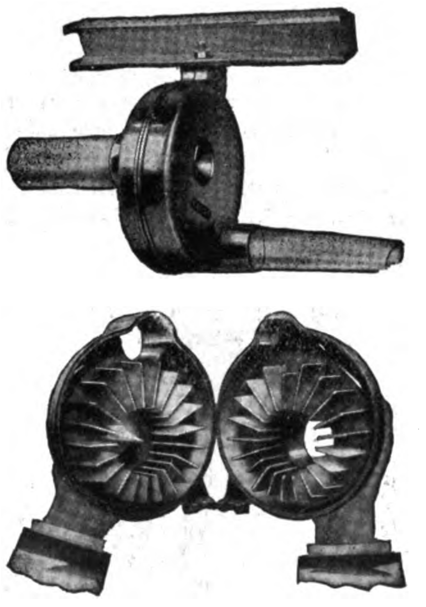
Heretofore there has been no entirely satisfactory way to remove tires from rims. It is a task that requires from 15 minutes to two hours' time, according to the skill and ingenuity of the workman.

The Lawco Rim Tool enables anyone to remove a tire from any demountable transversely split rim in a minute or less. The tool is easy to adjust, easy to attach and will give quick results. As shown in the illustration this rim wrench is simply a set of claws that can be hooked over a rim and contracted by the simple motion of a lever. After the tire has been fixed it can be put back on while the rim is still in the grip of the tool. A toggle or reverse movement of the lever expands the tool and the rim as much as may be necessary to cause the ends to meet and permit latching. This tool also can be used to break open any sort of latch. Breaking the latch is done with an expansion movement performed by a single slight movement of the lever. The tool is made of forged steel and is strong and simple in design.

**Manufactured by the F. H. Lawson Co., Cincinnati, O. Price, $3.50.**



Lawco Rim Tool.



Outside and Interior View of Vacuum Muffler.

## THE VACUUM MUFFLER.

The exhaust gases, as they come from the engine, are under a much higher pressure than the outside atmosphere and without a muffler they expand suddenly with a loud report. The method employed to silence this noise has been to liberate the exhaust gases suddenly from the small exhaust pipe into the larger chamber of a muffler, where the force of the exhaust is lessened both by expansion and by leading the gas back and forth within the muffler until their velocity has died before final discharge into the air.

The Vacuum Muffler allows a direct charge through the muffler. The violent force of the discharge is deflected against a central cone and split up into numerous small discharges, each of which is separately expanded to atmospheric pressure. These discharges are delivered into the atmosphere with scarcely any noise. It consists of two parts made of cast iron, which are bolted together with three bolts with nothing to shake loose or rattle.

**Manufactured by the Vacuum Muffler Corporation, New York City, N. Y. Write for prices.**

Cuno Cigar Lighter.

## CUNO AUTO CIGAR LIGHTER.

The electric cigar lighter fills a much needed want on the motor car. The Cuno Auto Cigar Lighter is simple, efficient and reliable. The burner tip is made of heavy wire and will last indefinitely. It is equipped with six foot cord that automatically rewinds after being pulled out for use. It is finished in nickel and mounted upon the dash by drilling a hole 25/32 of an inch in diameter and inserting the neck from the rear of the dash and tightening nut. A resistance coil is furnished for use with cigar lighter on cars having either 12, 18 or 24 volt batteries. Connecting the battery wire to one end of the coil, connecting other end of screw on round fiber disc on side of the lighter and connecting the other screw to ground makes lighter ready for use.

**Manufactured by the Cuno Engineering Corporation, Meriden, Conn. Write for prices.**

## DOUBLE OUTLET Y PLUG SOCKET.

A unique and much needed device that has recently been placed upon the market by a well known firm manufacturing accessories is a two-outlet plug socket for automobile dashboards. Unlike the straight plug socket this plug is made in the Y shape, converting a single outlet into a double socket. By its use the owner converts his single dash lamp socket for two purposes at the same time, for example, one side of the plug may be used for spotlight and the other side either for an inspection lamp, regular dash lamp or cigar lighter.

This plug has a standard Edison type plug connection on one end, which can be plunged into any dash lamp socket and is neat appearing with the exposed parts nickel plated. It is made in double contact, single contact and double to single contact.

**Manufactured by the Metal Specialties Manufacturing Co., Chicago, Ill. Write for prices.**

PAT APPL'D FOR

Double Outlet Y Plug Socket.

### F-W-S SWIVEL JOINT.

But few people realize the strain to which the speedometer swivel joint is put. This joint is usually located out of the way and receives but scant attention and has to stand tremendous speeds, usually rotating two or three times faster than the engine crankshaft. To withstand this extreme strain and rapid rotation the F-W-S Swivel Joint has been designed.

The F-W-S joint is designed primarily for strength. The four steel gears are of one-piece construction, that is, each gear and its respective shaft is turned from one piece of stock, thus eliminating trouble from gears loosening on the shaft.

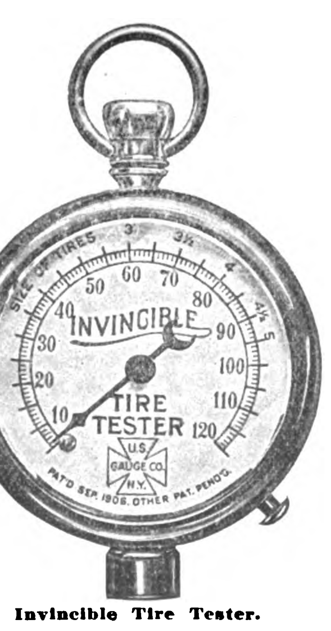
**Manufactured by F. W. Stewart, 1402 Michigan Ave., Chicago, Ill. Price, $2.50.**

### INVINCIBLE TIRE TESTER.

Not every motorist realizes that in many cases one-fifth of his car value is in the tires. This being the fact, more time should be spent and care exercised in keeping the tires in condition. Air pressure is a big factor in tire life and every motorist should make a periodic test of the tires to be sure that they are properly inflated.

The Invincible Tire Pressure Tester is an ingenious device, which may be carried in the vest pocket like a watch or in a tin box, which is furnished, in the tool box. The crystal is made of so-called, unbreakable composition, which is transparent. The dial is graduated to indicate from zero to 120 pounds pressure. In addition to the pounds pressure markings, a second series of numbers indicates the pressures required for different sized tires.

**Manufactured by United States Gauge Co., New York, N. Y. Price, $1.25.**

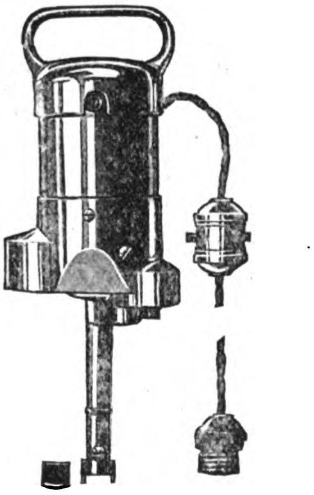


Invincible Tire Tester.

### STENMAN VALVE GRINDER.

This new machine, recently placed upon the market, is designed to save labor in valve grinding, and it will handle truck, tractor, aeroplane, marine or stationary internal combustion engine valves. This machine will operate from either direct or alternating current and also can be operated from any standard lighting circuit. Any valve can be reground in either the L. T. or I head construction, and the valve seat renewed in from three to five minutes as compared with from 15 to 20 minutes required with hand tools. Doing accurate work this machine has met with remarkable success, for it is now being used by the government at Camp Devens, at various aviation fields, by such concerns as the United States Steel Co., the Western Electric and Standard Oil companies and numerous garages throughout New England and New York states. It is thoroughly practical for any size establishment.

**Manufactured by the Stenman Electric Valve Grinder Co., Inc., 42 Southbridge St., Worcester, Mass.**

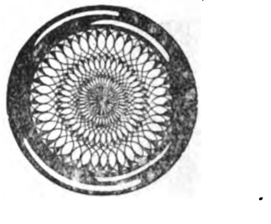


Stenman Electric Valve Grinder.

### NU-RA-LENS.

Headlight glare, a factor that is being legislated against in most of the states, constitutes a danger which causes as many accidents to the machine fitted with glaring lights as to other machines on the highways. The Nu-Ra-Lens is an attractive headlight glass, which is designed to prevent direct ray action with the attendant glare. This type of lens is mosaic in effect, with its surface broken into many small prisms, which deflect the light, but do not dim it. In this way all of the light from the bulb is thrown in front of the machine, but not in the form of direct rays.

The manufacturers claim that though a perfectly white and clear light is projected, it possesses none of the objectional glare common to clear glass lenses. The illustration shows the general appearance of this lens, which is perfectly smooth upon the outside, the prismatic effect being obtained by projections upon the inside of the glass.



**Manufactured by the Nu-Ra-Lens Co., 54 N. Fourth St., Columbus, O. Prices from $2 to $3 according to size.**

### OREM MOTOR PROTECTOR.

Upon practically all tractors and many trucks the carburetors are fitted with devices for filtering the entering air to prevent foreign particles, dust and dirt from passing into the cylinders.

Every autoist makes a point of filtering the gasoline and keeping the cylinder oil clean, yet fails to realize the amount of dirt entering the engine through the air intake. This dirt soon leads to carbon formation, and excessive cylinder and bearing wear. The Orem Motor Protector is a device which is designed to prevent all dirt from entering the carburetor.

This device consists of a heavy wire mesh cone upon which is placed a pressed felt, filter material, having an area of 84 square inches. The whole is enclosed in sheet metal and fitted with air intake and carburetor attachment. The manufacturers claim that there is no noticeable restriction of intake air when this device is used, and that the felt surface is, in a measure, self cleaning, for the vibration of the machine shakes off the dust into a dust collecting ring at the bottom of the device.

**Manufactured by the Orem Motor Protector Co., 208 Maryland Trust building, Baltimore, Md. Write for price.**

THE OREM MOTOR PROTECTOR CO.
PATENTED FEB.13,1917.
BALTIMORE, MD.

The Orem Air Filter.

Martin Attachable Door Pocket.

## ATTACHABLE DOOR POCKET.

Among the needed accessories designed for the Ford and Chevrolet cars is the Martin Door Pocket. This pocket fastens over the door upholstery and is made of a high grade of leather cloth, which is warranted not to peel or crack. The pocket offers sufficient space for the carrying of route books, pamphlets, small tools, etc. With the limited space the advantages of this pocket may be readily seen.

**Manufactured by the Martin Manufacturing Co., Inc., Lancaster, O. Price, $1.**

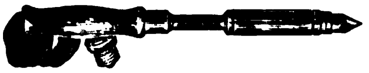
## DOVER SOLDERING IRON.

There is one little device that is practically indispensable around a garage or repair shop, a soldering iron. Not only is this valuable to a mechanic, but also to a car owner, for there is always something about the car or house that needs repairs. Illustrated herewith is an electrically heated iron that has many advantages over the old style which had to be heated over a gas flame or in a stove.

The Dover electrically heated iron consists of a Vea heating unit tightly enclosed in a steel tube to prevent damage from careless handling. A flanged copper core runs the full length of this heating element and is connected with the soldering tip. Around the core is a vitrified clay tube upon which is wound the resistance coils. The Vea insulating material, which is said to be a non-conductor of electricity, but a good conductor of heat, is forced in between the vitrified tube and the copper core, and between the coils and the steel casing, under hydraulic pressure, which prevents all danger of burning out coils.

The iron is so designed that the tips may be removed for replacement or for changing with other styles of tips. Irons may be obtained wound for any voltage ranging from 50 to 250, and in various sizes, for heavy or light work.

**Manufactured by the Dover Manufacturing Co., Dover, O. Write for prices.**



Dover Soldering Iron.

## NEW FORD OIL GAUGE.

A clever device for Ford cars that has been recently placed upon the market by a well known firm manufacturing Ford accessories, is an oil gauge that is designed to meet the objections of those people who think there is danger of a stone flying up and breaking the glass in the old style oil gauge. It consists of a metal chamber containing a float to which is attached a rod with a white ball on the end. The distance between the ball and the top of the chamber show the amount of oil in the crank case. Unlike the other style the oil level can be seen at night and dirt cannot obstruct the view. Installing is an easy matter by simply removing the lower pet cock, screwing the gauge into its place and rescrewing the pet cock into the gauge. This device is made of malleable iron, finished in black enamel and nickel with a white ball, all weighing 10 ounces.

**Manufactured by the Apco Co., Providence, R. I. Price, 60 cents.**

Apco Ford Oil Gauge.

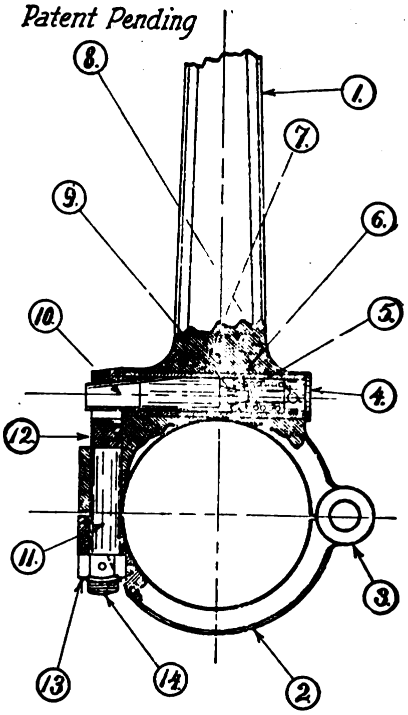
## SELF-ADJUSTING ROD BEARING.

Patent rights are now pending on a new and novel form of connecting rod bearing which is applicable to practically any type of gasoline engine. This device is claimed to be self-adjusting, a feature that should be of great interest to all users of cars who are obliged to make bearing adjustments frequently.

Reference to the accompanying diagram will show that the rod is of conventional design, but fitted above the bearing with a horizontal bolt, 10, which is beveled at one end, slides in a bushing, 7, and is fitted with a ball and spring lock arrangement, 6 and 5, the ball and spring being retained by the cover adjustment, 4. The bearing cap, 2, is hinged at one side, 3, and fitted with a sliding bolt and nut, 4 and 13, the upper end of which is slotted and hooked over the horizontal bolt, 10.

The connecting rod is put into place as usual and the play taken up by the nut 13. As the bearing wears, by constant vibration, the bolt 11-11 works upward, keeping the cap securely and tightly around the crank pin. Every upward movement of the bolt allows the horizontal bolt, 10, to work outward, thus clamping the bolt, 11, and preventing it from moving downward. The horizontal bolt, 10, cannot work back against the spring because it is locked in place by the ball lock, 6, the whole action compensating for any wear in the crankpin. It is now the intention of the designer to place the rod on a royalty basis and anyone interested is requested to write to the address below.

**Charles C. James & Co., 1 Wall St., New York City. Write for full particulars.**



Self-Adjusting Rod Bearing.

## INAJIFFI FUEL TABLETS.

Inajiffi fuel tablets are intended to clean the carbon out of the engine and to use in gasoline for producing more mileage. They are guaranteed and money will be refunded after a trial if the tablets do not do all that is claimed for them. For removing carbon 40 tablets are put in 10 gallons of gasoline.

**Marketed by S. R. Dexter Co., 107 Massachusetts Ave., Boston, Mass. Price for box of 200 tablets, $1.**

## NEW STYLE TOOL HOLDER.

In getting out their new style "O O" Tool Holder, the manufacturers have considered particularly the requirements of users of bench and watch lathes and for the first time the correct size of holder required in these lathes can be secured.

The cutter is furnished in the finest grade of high speed steel treated by the Taylor-White process. Both of these tools are nicely finished and sent complete with a 3/16 inch square cutter and wrench. The holder size is 5/16x½x3½ inches.

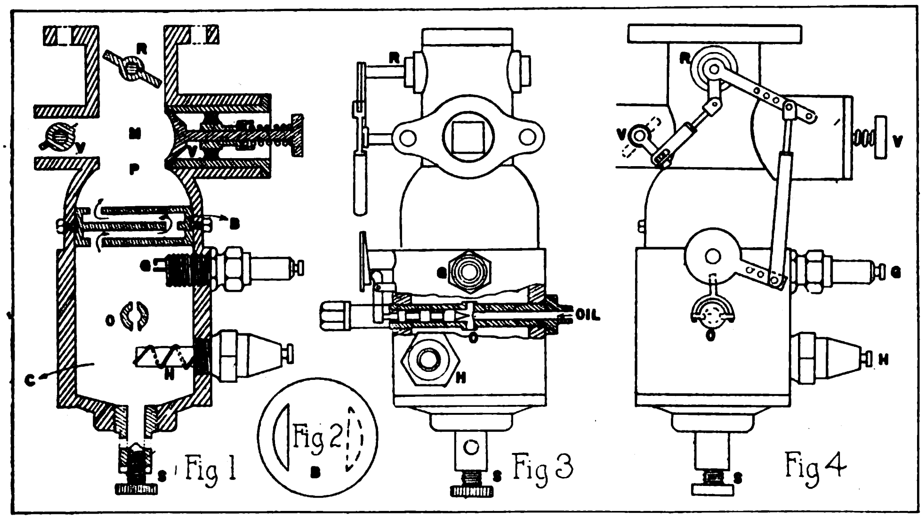
**Manufactured by the Ready Tool Co., Bridgeport, Conn. Write for prices.**

New Style Tool Holder.

# *Gas Fuel Producer For Truck Engines*

By S. R. WILLIAMS.

AT WEST PARK, O., was recently developed by E. A. West and E. E. Parsons an oil gas producer for automobile vehicle engines which is quite revolutionary in some of its features. The most important of these features being that using either crude oil or kerosene as fuel the engine is made to start on its own fuel and is entirely independent of temperature conditions in starting. To drivers of auto trucks whose only starting device is a crank, the possibility of starting an engine in cold weather, just as readily as in the summer, will make a most favorable impression.



**The West-Parsons Gas Producer: Fig. 1, Cross Section of the Producer; Fig. 2, Diagram of Fire Extinguisher of the Producer; Fig. 3, Vertical Transverse Section Showing Detail of Needle Valve; Fig. 4, External Drawing That Shows the Control Members.**

At the outset it is to be emphasized that the device invented and patented by Messrs. West and Parsons is not a special form of carburetor. It is a producer of gas from crude oil or kerosene and the gas thus formed may be carried any distance to an engine and there properly mixed with air used as a fuel for the engine just as any gas engine would be handled. Not only may the gas be used in an engine, but it may be piped away from the producer and used in buildings for heating and lighting purposes.

The gas producer has the characteristic of a gas producer that a small portion of the fuel is used in producing the gas. On account of the crude oil or kerosene being dirtier to handle than gasoline the larger field of usefulness for this producer seems now to be on the motor truck, although its wonderful efficiency has been demonstrated on an ordinary six-cylinder passenger car which has been run about 9000 miles. This car, equipped with an ordinary carburetor, had a mileage of 14-16 miles per gallon of gasoline, while with the gas producer of Messrs. West and Parsons replacing the carburetor and using the poorest grade of kerosene the same car made a record varying from 18-26 miles per gallon of kerosene. When one considers the price per gallon for the two fuels and the relative amounts of the two used, this makes a splendid showing for this new gas producer on the passenger car.

### Developed for Motor Truck Use.

At present, however, the producer is being developed particularly for motor trucks, where the matter of fuel is so important from an economic standpoint. The producer was first tried out on a 1½-ton motor truck over pavings and roads to which the ordinary motor truck would be subjected. The motor truck equipped with this gas producer has shown power sufficient to handle its load under all conditions.

The simplicity of the gas producer will at once commend itself to the engineer. In Fig. 1 is shown a vertical cross section of the small gas plant. Through a needle valve, O, the oil is admitted to the producing chamber, C, where it drips down on the heating coil, H. This heating element is removable like a spark plug, so that if it gives out it is easily replacable. One end of the coil is grounded on the frame of the producer and the other end is connected to the battery in the same way that a spark plug is. The coil is wound on an insulating material with depressions in the insulator for retaining the oil and when the coil is heated by an electric current the oil vaporizes and fills the chamber, C. The spark plug, G, is then started and a flame is generated in the producing chamber, C, which cracks up the globules of oil, forming a gas, which is to be the fuel of the engine.

Once the flame from the spark plug is started the current is turned off from the heating element, which is used only in starting. The spark plug, G, is kept going continuously while the engine is running, although once the flame is started it will keep going indefinitely under a constant load, but to make sure that there is always a flame under a varying load the spark gap, G, is kept in operation by an induction coil. After starting conditions are obtained the oil as it comes in through O comes in the form of a fine spray and it is in this condition that as it sprays through the flame in the producing chamber, C, the oil is cracked and formed into gas. There is a very small amount of the oil used in producing the gas. The temperature of the chamber, C, is regulated by the adjustable screw valve, S, which admits air.

### How the Gas Is Made Inflammable.

In order to put out the flame as the gas is drawn forward toward the mixing chamber, M, it is drawn through a fire extinguisher, consisting of a series of plates with openings out of alignment. This fire extinguisher shown in B, Fig. 1, and in more detail in Fig. 2, acts on the same principle as the wire gauze about the Davy's safety lamp for miners' works, it reduces the temperature of the gas below the point of ignition.

Beyond the fire extinguisher, B, the gas goes to the mixing chamber, M, Fig. 1. The section marked P could be an extended length of pipe so that the outfit thus far described is simply the producer and the mixer, which is next to be described, may be the mixer on any gas engine or the mixer on a gas stove or light. There is no feature of a carburetor here except insofar as mixing is done in a carburetor.

Through the butterfly valve, V, and the automatic valve, V, the proper amount of air is admitted into the mixing chamber, M, Fig. 1, and mixed with the gas as it comes from the producer. By means of the control valve, R, the gas properly mixed with air is then passed through the manifold to the cylinders of the engine.

In Fig. 3 is shown a vertical transverse section of the gas producer and mixing chamber with greater detail of needle valve opening O, where the oil enters the producing chamber, C. Fig. 4 shows the exterior of the gas plant and the mechanism for starting the feed supply and the control valve, which work synchronously.

### How Efficiency Is Increased.

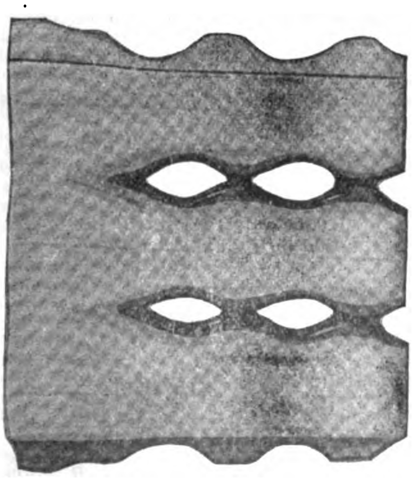
The question may at once be raised, where does the increase in efficiency come in, as between an engine fitted with the above described gas producer and one fitted with an ordinary carburetor? In the theory of heat engines we have an expression for the efficiency of the engine in terms of the absolute temperature at which the working substance is used in the engine and the temperature at which it is exhausted. The greater this difference can be made the greater the efficiency. This can be done in two ways, either by making the temperature of the working substance, when it is used, higher, or else lowering the temperature at exhaust.

The claims of the patentees are that in the producer a much larger percentage of gasification is obtained than is procured from gasoline in the ordinary carburetor. Hence at the time of an explosion nearly complete combustion takes place, giving a higher temperature at this point, and, consequently, more energy can go into the impulse given to the piston of the engine. There is practically no slow burning combustion following the explosion in the cylinder, because almost complete gasification has occurred in the producer.

The slow combustion which so often follows the explosion in a gasoline engine may be seen in the flame playing out of the engine's exhaust. This makes for inefficiency by raising the temperature of the exhaust. On a 25 horsepower, four-cylinder engine, which has been used for experimental purposes on a block, it is very significant that the exhaust pipe, which is an iron pipe painted black, the paint is not burned off at a very short distance from the cylinder after several months use under all sorts of loads. The exhaust on an ordinary car always has the paint burned off and the iron severely pitted.

Another advantage in running the engine with this producer was shown on a six-cylinder car already referred to. After 9000 miles the car was taken to the garage for an overhauling. The testimony of the workmen was that they had never taken an engine apart with the cylinders in such excellent shape. Their surfaces were like a mirror. The very small part of the oil which is not gasified in the producer is carried over into the cylinder and acts as a lubricant, because it is not carbonized by the slow combustion which usually occurs after the explosion. There is practically no carbon deposit on the spark plugs or valves and this is to be ascribed to the fact that almost complete gasification has occurred.

It would seem, therefore, that in solving the very important problem of using the heavier distillates as a fuel for motor trucks and using it in such a way that the engine may be started with less trouble on the same fuel than can be done on the lighter distillates, that Messrs. West and Parsons have also secured results of great importance in adding to the reduction in cost of fuel and maintenance and the life of the engine.

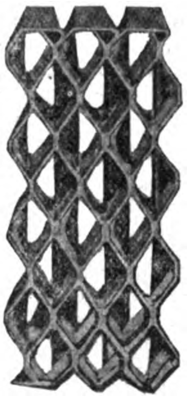


Top View of Section of Spery Radiator, Showing the Openings of the Vertical Tubes Formed in the Walls of the Honeycomb Cells.

# New Truss-Design Radiators Are Efficient

### Construction of Spery Gives Values of Both Honeycomb and Tubular Types.

Broad claims for the appearance and efficiency of Spery radiators are made by the manufacturer, the Hooven Radiator Co., Chicago, Ill., the construction being such that they have all the quality values of both the honeycomb and tubular types. In design the cooling sections are really a combination of the honeycomb, with large cells and consequent cooling efficiency, and the tubular, that is practically immune from clogging, because of the vertical water chambers. In addition to this the cores have the strength resultant from trussed or bridge design, being extremely rigid, and yet very light. A further claim is that the radiators are unusually efficient from the exceptionally large water chambers.

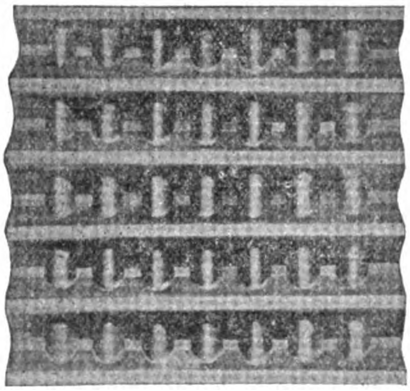


Front Vertical Section of Spery Radiator, Showing Cellular and Tubular Construction.

These radiators are now being produced commercially and are intended for all services—for trucks, tractors, aeroplanes and passenger cars. The design is a new idea in which claim is made that all the qualities of both types are combined with none of the faults of either. The Spery radiator manufacturer maintains that the design is a distinct advance—the first that has been made in cooling systems, although all other details of engine construction have been materially improved during the past 15 years. This does not apply to processes of manufacture of accuracy of workmanship, but to affording higher efficiency, just as ignition air carburetion have been improved and have been made more dependable and reliable.

The Spery radiator is unique in design. With reference to its construction the inventor, Mr. Hooven, states that when seen from in front the cooling section has the appearance of a honeycomb, which is regarded by owners and drivers of trucks and cars as being the most sightly construction. When the cross section is noted the ample zigzag canals impress one as affording an unusual degree of radiation and consequent cooling efficiency. But when the top of the core is observed one sees numerous vertical tubes through which there is direct gravity fall of the water content, and from a side view of the core one sees that these are pressed into the zigzag water walls and are actually a part of the walls.

Mr. Hooven claims that the tubular type radiator has an advantage as compared with a honeycomb type in that it will not clog with sediment or scale, that because of its vertical tubes the Spery radiator cannot be obstructed so as to affect the circulation of water through it. At the other hand the tubular radiator has less radiating surface and will freeze quicker, and Mr. Hooven maintains that the Spery radiator has a marked advantage in that the body of water carried is in the large zigzag canals and vertical tubes and there is little probability of freezing. The tubular type, because of greater rigidity and that it may be repaired easily has been preferred for trucks and tractors, and it has greater endurance to road shocks and vibratory stresses. The Spery construction is such that the vertical tubes are integral with the walls of the zigzag water walls and are substantially braced or trussed. The design especially adapts the Spery radiator for either truck or tractor equipment. The resistance to freezing is a very potent factor in selecting radiators for aeroplane use, where they are subjected to low temperatures at high altitudes.



Section of Spery Radiator, Side View, Showing Tubes Integral with the Side Walls of Cells.

The surfaces where the walls and spacers are joined are unusually wide, this making for ease of soldering and insuring against breakage and leaks. Because of the extremely simple construction Spery radiators are very easily and quickly repaired—minimum expense in the event of accident being an important factor with many owners. Spery radiators are claimed to insure engine efficiency because of large water chambers, the volume of water carried being from 35 to 40 per cent. more than either the tubular or honeycomb types.

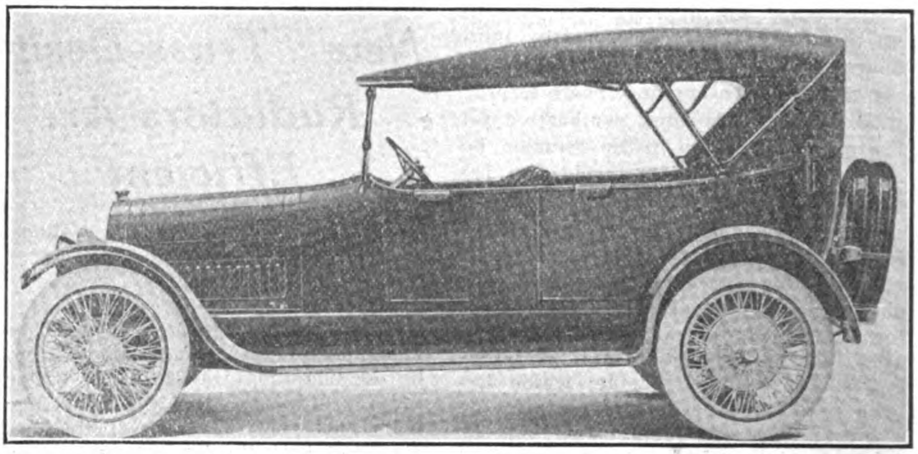
### LA SALLE COUNTY GARAGE MEN FORM ASSOCIATION.

The garage owners and automobile dealers of La Salle county, Illinois, have formed a local association for the purpose of advancing and safeguarding the business interest of La Salle county.

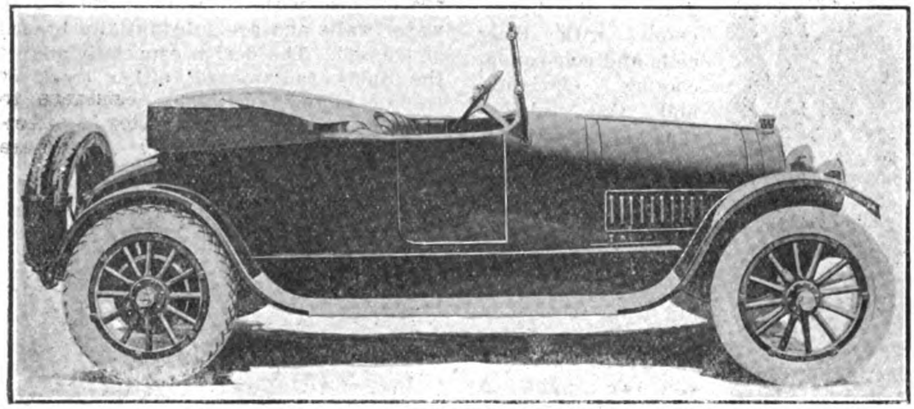
Mr. Matt Knauf of Peru was elected president and Mr. Will Kinder of La Salle Auto Co. was elected secretary and treasurer. About 15 of the leading dealers were present and made application for membership.

# *New Apperson Engine With Eighty Less Parts*

**Apperson Brothers Automobile Co., Kokomo, Ind., have turned the quarter century mark in the production of Apperson cars. The new eight-cylinder engine of 60 horsepower introduced in this year's models is the first of its kind with single camshaft and but two cam gears.**



The Seven-Passenger Model 1918 Apperson Equipped with the New Eight-Cylinder Engine. Side View Showing Wire W heel Equipment.



Apperson 1918 Chummy Roadster. Side View, Showing Graceful Lines and Cover for Rear Seat When Not in Use.

### APPERSON EIGHT SPECIFICATIONS.

| | |
|---|---|
| **Engine** | **Apperson** |
| **Cylinders** | **Eight, cast in fours** |
| **Bore** | **3¼ inches** |
| **Stroke** | **Five inches** |
| **Valves** | **In side** |
| **Ignition** | **Remy** |
| **Starting and lighting** | **Bijur** |
| **Clutch** | **Disc** |
| **Gearset** | **Three speed** |
| **Wheelbase** | **130 inches** |
| **Wheels** | **Wood** |
| **Tires** | **34x4** |
| **Rear axle** | **Demountable** |

# NEW CONCERNS RECENTLY INCORPORATED

## Monthly Record of New Business Houses for which Charters Have Been Issued in the Various States and Classified According To Nature of Business

### NEWLY ORGANIZED MANUFACTURERS OF CARS.

**Hanford, Cal.;** The Cousins Tractor Co.; $100,000; to make, sell and repair tractors; Sara McCord, H. R. Cousins, A. D. Ferguson.

**Wilmington, Del.;** Powell Tractor Corporation; $500.000; to manufacture, buy and sell automobiles.

**Kendallville, Ind.;** The Noble Motor Truck Corporation; $1,000,000; to manufacture motor trucks; J. L. Haugg, G. M. Patterson, H. W. Bradtmiller, C. J. Mumton.

**St. Louis, Mo.;** St. Louis Woodwork Manufacturing Co.; $10,000; to manufacture automobiles, motor boats and airplanes. John S. Hunt, Samuel G. Hunsaker, Fred W. Fegel, John T. White, Fred W. Bensing, Larry J. Murphy, Albert F. Diederich.

**St. Louis, Mo.;** The Zelle Tractor Co.: $1,000,000: to manufacture tractors.

**Philadelphia, Pa.;** Franklin Auto Co.: $25,000: to manufacture automobiles: F. R. Hansell. J. Vernon Pimm, S. C. Seymour.

**Nashville, Tenn.;** National Body and Manufacturing Co.; $75,000; to manufacture automobiles, trucks, bodies and accessories; C. R. Wood. Louis Steinberg, J. K. Cravens, C. L. Holland, S. G. Holland.

**Oshkosh, Wis.;** Wisconsin Tractor Sales Co.; $5000; to deal in tractors and farm machinery; A. D. Paine, John F. Wilke, A. A. Schwertfeger.

**Sauk City, Wis.;** Wisconsin Farm Tractor Co.; $100,000; Oscar Boerki, Carl Pulvermacher, Arthur L. Aldrich, Julius J. Buro, Math Huerth.

### PARTS AND FITTINGS MAKERS INCORPORATED.

**Mobile, Ala.;** The Chickasaw Motor Co.; $15,000; L. E. Campbell, T. D. Devault, M. Groom.

**Chicago, Ill.;** Blue Front Motors Corporation of Illinois; $100.000; W. M. Cathrae, I. M. Sax, O. J. Hammersmith, Charles W. Shenk, Orlin I. Wahl.

**Kendallville, Ind.;** The Noble Heater Co.; $300.000; to manufacture automobile and metal heaters; Gilbert A. Bartholomew, Clarence E. Baker, James E. Baker, William S. Baker.

**Springfield, Mass.;** Onlees Headlight Controller Co.: $75,000; Eva J. Scott, Clifford G. Yeager, Charles S. Ballard.

**Detroit, Mich.;** The Automobile Device Co.; $10,000; Edgar J. Denson, Joseph F. Kennedy, H. A. Wood.

**New York, N. Y.;** Automotive Products Corporation; $1000; to manufacture automobile and aero engines; W. B. J. De Lacy, Agnes G. Logan, D. E. Hanlon.

**Syracuse, N. Y.;** Paddock Motor Sales, Inc.; $50,000; to deal in all kinds of motor engines, machines; M. W. Lindsley, G. Stevens, W. D. Paddock.

**Cleveland, O.;** Cleveland Auto Body and Radiator Co.; $10,000; to manufacture bodies and radiators; Lee Oppenheim, Arthur Krause, Josephine Schneurer.

**Cincinnati, O.;** Rapid Cooler Auto Radiator Co.; $60,000; to manufacture motor car radiators; C. M. Bechtel, E. J. Geske, J. Vernon Shaw, Joseph M. Brown, J. B. Towler.

**Emery, Wis.;** Minnesota Masterlock Co.; $10,000; W. T. Kennedy, F. E. Yates, L. G. Ogden.

### DEALERS IN AUTOMOBILES AND MOTOR TRUCKS.

**Dover, Del.;** Fourteenth Street Auto Supply Co., Inc.; $20,000; to deal in automobiles and supplies; Richard A. Israel, Frank L. Peckham, Frank B. Gibb.

**Brimfield, Ill.;** The Auto Sales Co.; $10,000; to deal in automobiles and accessories; J. J. Kelly. O. F. Kelly, H. J. Meinler, W. D. Maher, E. S. Maher, Ira C. Cotton, S. H. Neikirk, Chalmer D. Forney, W. E. Cady, G. H. Laroned, M. Raymond Clark, A. J. Sloan, Philip Plack, George Barnett.

**Chicago, Ill.;** The Indiana-Chicago Truck Co.; $7500; J. C. Mackinnon, John Kramer, George T. Crossland.

**Chicago, Ill.;** Racine Universal Motor Co.; $2000; W. R. Mitchell, E. B. Harvey, S. O. Anderson.

**Chicago, Ill.;** Service Motor Sales Co.; $10,000; Robert M. Pierson, Jack L. Salzman, Henry H. Lund.

**Springfield, Ill.;** The Campbell & Wochner Co.; $35,000; Samuel M. Campbell, Henry Wochner, Charles Campbell.

**Pierceton, Ind.;** Knull Motor Co.; $30,000; Carl F. Knull, George A. Seifer, Lillian E. Deboer.

**Covington, Ky.;** Seiler Motor Car Co.; $25,000; G. Seiler, John J. Seiler, Maurice L. Galvin.

**Harland, Ky.;** Shannon Motor Co.; $2000; A. F. Whitfield, Jr., C. V. Bennett, C. R. Shannon.

**Lexington, Ky.;** Goodwin-Field Motor Co.; $15,000; George E. Goodwin, John U. Field, Joseph Goodwin.

**Versailles, Ky.;** Miller-Field Motor Co.; $15,000; George E. Goodwin, John U. Field, Scott G. Miller.

**Brockton, Mass.;** Brockton-Overland Co.; $10,000; to deal in automobiles and accessories; H. C. White, Ellis S. Lelacheur, H. T. Mason.

**Middleboro, Mass.;** Maxim Motor Co.; $100,000; Carlton W. Maxim, Ernest L. Maxim, Florence W. Swett.

**Grand Rapids, Mich.;** Boulevard Auto Co.; $10,000; Frank Noblett, V. H. Smith, Isaac J. O'Donnell.

**Saginaw, Mich.;** Frand & Co.; $30,000; to deal in automobiles, trucks and accessories, and to conduct a general garage business; T. L. Jennings, Leonard Frank, R. P. Shorts, G. A. Robertson, H. C. Beardslee.

**Springfield, Mo.;** Highgrade Motor Sales Co.; $8000; to sell automobiles and accessories, bicycles and other motor power and electrical machines; C. L. Jarrett, H. H. Jarrett, E. Kinlock.

**St. Louis, Mo.;** St. Louis County Auto Sales Co., Inc.; $8000; to conduct a general automobile and accessory business; Henry F. Herschbach, Harry V. S. Grover.

**Camden, N. J.;** General Supply and Transportation Co.; $50,000; Isaac M. Griscom, David H. Goff, Warren C. Marshall, Robert Stackhouse.

**Newark, N. J.;** Franklin Motor Car Co.; $50,000; Kent Bender, Anna M. Williams, Frederick J. Feurbach, Jr.

**Newark, N. J.;** Fort Motors; $25,000; to deal in automobiles; Frank A. Ryan, William Reid, Harvey E. Whitney, Patrick A. Fort.

**Newark, N. J.;** Republic Transportation Co.; $100,000; Joseph H. Steinhardt, Frederick W. Schlosstein, Peter A. Cavechia.

**Plainfield, N. J.;** Thompson-Goodman Motors Co.; $50,000; to sell motor vehicles; Lilian T. Thompson, Andrew C. Thompson, Rowland D. Goodman.

**Plainfield, N. J.;** Unit Signal Co.; $50,000; to deal in automobiles; Alfred E. Binz, Daniel C. Adams, A. E. Giddes.

**Buffalo, N. Y.;** The Pratt & Dunn Motor Credit Corporation; $15,000; William G. Pratt, Margaret R. Pratt, Paul A. Dunn.

**New York, N. Y.;** Automobile Development Co.; $70,000; Charles M. Lorham, R. M. Lockwood, W. Lincoln.

**New York, N. Y.;** G. & B. Auto Service Co., Inc.; $1000; to deal in automobiles; Israel Goldfarb, George G. Beali, Mary Goldfarb.

**New York, N. Y.;** Lexington Motor Co.; $50,000; H. W. Gadton, W. A. Shields, J. M. Keatings.

**New York, N. Y.;** Merida Motor Export Co.; $10,000; J. Harris, G. A. Canalizo, J. B. Purcell.

**New York, N. Y.;** Morgan Brothers Automobile Trucking and Forwarding Co.; $15,000; A. Kutz, L. and M. Morgan.

**New York, N. Y.;** Olympic Truck and Transportation Co.; $25,000; to conduct a motor truck auto and general garage business; I. I. Tankus, L. Costable, N. Muller.

**New York, N. Y.;** J. Witkin, Inc.; $15,000; Hector Garten, Daniel Getz, Edward P. Butler.

**Lidgerwood, N. D.;** Lidgerwood Motor Service Co.; $50,000; B. W. F. Riese, Joseph Saumweber, Anton Wohlwend.

**Canton, O.;** The W. S. Cashner Motor Car Co.; $125,000; S. W. Cashner, P. L. Heckman, A. R. Lemmon, L. F. Cunningham, James E. Robinson.

**Cleveland, O.;** The Allis Motor Sales Co.; $10,000; H. W. Allis, M. C. Burnes, A. E. Watson, M. T. Mazanek, George T. McConnell.

**Cleveland, O.;** Corona Automobile School; $15,000; William Herschaft, Richard Simon, Allan Stefan Bzwonkowski, Stanislav Bartessek, Ignacy Jadrych.

**Cleveland, O.;** Charles J. Deckman Distributing Co.; $10,000; to deal in automobile supplies; Charles J. Deckman, J. H. Deitz, L. M. Hopkins, C. Moatz.

**Cleveland, O.;** The Intercity Trucking Co.; $30,000; W. S. Blood, H. G. Russel, A. G. Davis, W. L. Jover, G. E. Romano.

**Cleveland, O.;** Lakeview Automobile Service Co.; $10,000; Joseph Simon, Jr., John A. Elden.

**Cleveland, O.;** Pearl Motor Sales Co.; $10,000; D. B. Donnelly, Fred C. Evers, John W. Rentz, R. C. MacGill, P. L. Emery.

**East Liverpool, O.;** The Buckeye Motor Co.; $12,000; W. M. Litten, W. A. Hobbs, M. F. Morley, M. L. Hague.

**Cleveland, O.;** Weiss & Lewis Motor Trucking Co.; $35,000; W. B. Lewis, A. J. Weiss, Ada S. Weiss, Anna M. Lewis, O. F. Douglas.

**Newport, O.;** Rotor Motor Co.; $15,000; Clifford D. Orr, Mary B. Orr, Howard M. Benton.

**Sandusky, O.;** Griswell-Wagg Motor Co.; $10,000; Glenn Willis Griswold, August W. Allendorf, Fred H. Zerbe, Nelson E. Wagg, Claude J. Minor.

**Shadyside, O.;** Shadyside Auto Co.; $10,000; W. T. Jones, O. M. Atkinson, J. C. Berry, M. D. Mayhugh, Joseph Mitchell, John A. Robinson, J. R. Gabel, Crawford Neff.

**Akron, O.;** R. and R. Taxicab and Transfer Co.; $20,000; Solomon Rothenberg, Louis Rosenbeck, Frank B. Burch, Harry G. Rean, Ernest C. Martin.

**Youngstown, O.;** The Hooper Motor Co.; $20,000; H. R. Hooper, M. H. Hooper, E. I. Davies, Franklin B. Powers, C. A. Manchester.

**Youngstown, O.;** The Lauton Truck Co.; $150,000; A. W. Lau, Harry Viall, John T. Harrington, U. S. Deford, J. W. Blackburn.

**Toledo, O.;** The Oldham Auto Sales Co.; $20,000; George F. Oldham, Charles F. Wise, Roy Wise, Blanche O'Brien, Margaret F. Kaley.

**Toledo, O.;** The Throne Auto Co.; $25,000; H. E. Throne, Stanley F. Sawyer, William H. Schroeder, Walter H. Crause, S. E. Wall.

**Ardmore, Okla.;** May-Watkins Motor Co.; $12,000; C. Watkins, J. W. May, Don Harris.

**Memphis, Tenn.;** Erwin & Hicks Motor Car Co.; $9000; S. L. Erwin, J. F. Hicks, N. A. Cooke, T. O. Lee, Jr., J. J. Brewton.

**Nashville, Tenn.;** Brown-Simpson Motor Co.; $10,000; D. S. Simpson, A. K. Brown, E. R. Houston, F. E. McCray, E. A. Simpson.

**Llano, Tex.;** North Llano Auto Co.; $2000; C. E. Shults, S. C. Rainier.

**Norfolk, Va.;** Standard-Commerce Motor Truck Co.; $25,000; to conduct a truck business; P. M. Jones, S. R. Hill.

**Milwaukee, Wis.;** The Bursinger-Durkin Co.; $5000; to conduct an automobile business; Frank Bursinger, D. W. Durkin, W. V. Thompson.

**Shell Lake, Wis.;** The Allen Auto Co.; $15,000; E. H. Allen, V. W. Allen, L. W. Allen.

## GARAGES AND REPAIR SHOPS NEWLY CHARTERED.

**Quincy, Ill.;** Beatty Garage Co.; $6000; Thomas M. Beatty, J. W. Richards, Frank J. Penick.

**Indianapolis, Ind.;** Will-do-it Garage Corporation; $50,000; to buy and sell automobiles, parts and accessories; Edward F. James, Albert Miessen, Charles M. Templeton.

**Lafayette, Ind.;** Fireproof Garage Co.; $12,000; to engage in the garage business; Myron B. Morgan, William J. Snoddy, Richard Torrenga.

**Adiar, Ia.;** The White Way Garage; $10,000; James Saum, H. N. Geist.

**Detroit, Mich.;** Premier Garage, Inc.; $12,000; Joseph Schindler, John Schneider, T. P. Mihalovic.

**Lebanon, N. H.;** Vittum Garage Corporation; $1000; Perley E. Vittum, Orville N. Campbell, Florence M. Campbell, Walter J. Ackerman, Ralph W. Laird.

**New York, N. Y.;** Currier Garage Co., Inc.; $10,000; to engage in the garage business; Patrick Finnerty, Catherine Finnerty, Frank Kinsella.

**New York, N. Y.;** Strathmore Auto and Garage Co., Inc.; $10,000; A. J. Maher, E. T. Wood, C. Strathmann.

**Sapulpa, Okla.;** Jucksch Garage Co.; $5000; W. G. Frank, Edward Jucksch.

**Nashville, Tenn.;** Palace Garage and Sales Co.; $75,000; T. M. Haynes, Ed. F. Payne, Lester Rogers, George H. Wilson, J. W. Profit.

## ACCESSORIES, EQUIPMENT AND SUPPLIES.

**Dover, Del.;** American Oil Motors Co.; $1,000,000; to conduct a general manufacturing business; C. L. Rimlinger, M. M. Clancy, F. A. Armstrong.

**Dover, Del.;** Republic Oil and Sulphur Co.; $2,000,000; to obtain lands for the prospecting of oil and gas; R. Eichman, Louis B. Jump.

**Wilmington, Del.;** Quick Tire Service, Inc.; $25,000; to deal in rubber goods.

**Wilmington, Del.;** Visible Spark Plug Co.; $1,000,000; to manufacture and deal in spark plugs and other automobile accessories.

**Evansville, Ind.;** The Schroeder Headlight and Generator Co.; $300,000; William H. McCurdy, John D. Craft, W. A. Carson, Albert F. Karges, Marcus S. Sonntag, J. Henry Schroeder, W. S. Cook.

**Indianapolis, Ind.;** Mid-West Tire Co.; $300,000; to buy and sell automobile tires; Dr. M. J. Spencer, Frederick Krull, Walter Krull.

**Newark, N. J.;** The Kimel Auto Supply Co.; $25,000; to deal in automobile supplies.

**Elizabeth, N. J.;** Union County Tire and Supply Co.; $75,000; to deal in automobile tires and supplies; G. Weinberg, Henry Weinberg, Joseph Berkelheimer.

**Trenton, N. J.;** Tire Shop; $3000; to deal in automobile supplies; Stanley Newman, Samuel C. Newman, Israel Richmond, Benjamin Richmond.

**Buffalo, N. Y.;** Associated Dealers Tire Corporation; $60,000; to manufacture tires and tubes; Morgan Howell, C. M. L. Ashby, Sam Stohanovich.

**New York, N. Y.;** Acton Auto Supply Co.; $10,000; B. Young, A. Hollander, E. Morris.

**New York, N. Y.;** Anglo Tire and Supply Co.; $20,000; M. Berg, M. D. Angel, M. I. Sanders.

**New York, N. Y.;** New York Tire Service; $10,000; A. Foshay, A. G. Thanamun, A. Skillman.

**New York, N. Y.;** Quick Tire Service, Inc.; $25,000; to deal in and with rubber goods of all kinds; A. Foshay, A. G. Thanem, Russell Goldman.

**New York, N. Y.;** Simplex Tire Co.; $10,000; G. Eiseman, C. H. Meyers, A. H. Biern.

**Akron, O.;** Royal Tire and Supply Co.; $10,000; W. E. Renneckar, Mae L. Renneckar, J. O. Surbey, Carrie I. Surbey, S. F. Lichtenwalter, Nettie M. Lichtenwalter.

**Canton, O.;** Canton Tire Service Co.; $10,000; H. Arthur Plantz, J. Hackett, R. E. McGregor, C. R. Jaroch, Frank L. Westrick.

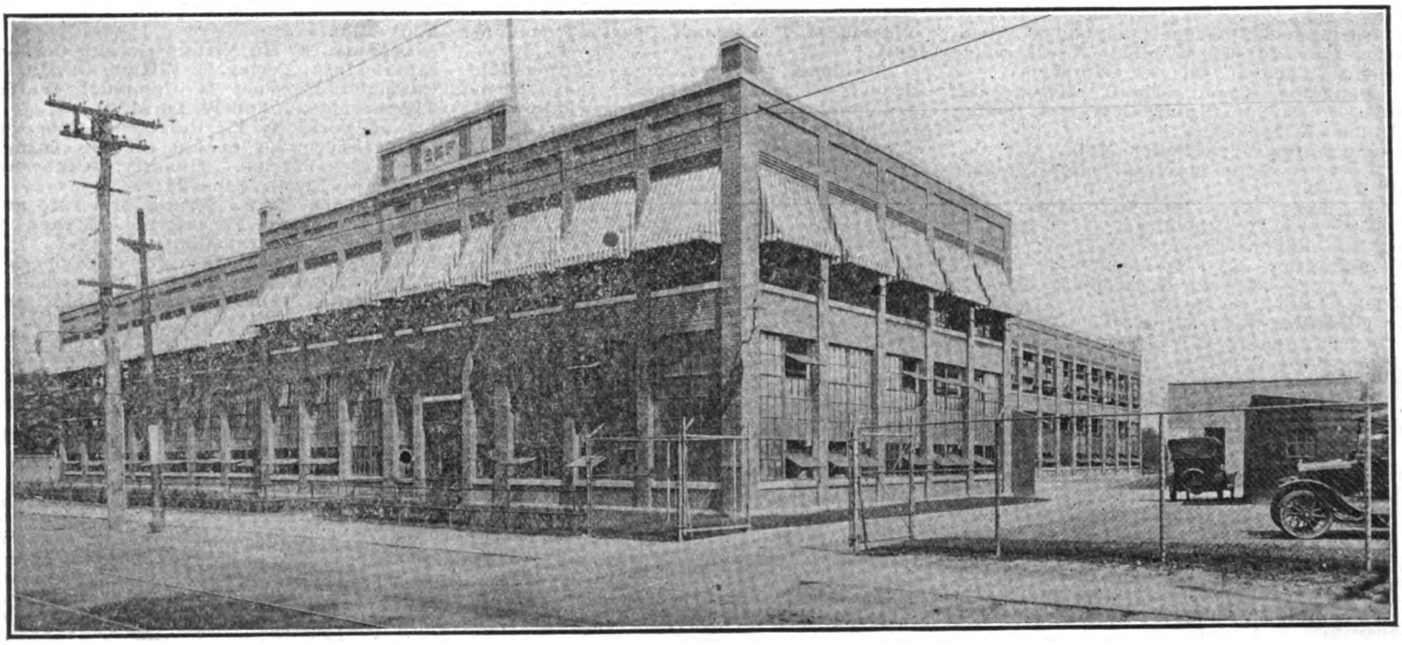
**Cincinnati, O.;** Central Auto Supply Co.; $10,000; L. W. Elser, J. O. Smith, William Rocha, A. Leussing, Arthur E. George.

**Cincinnati, O.;** Congo Tire Co.; $10,000; Ben L. Hefels, William H. Mathers, Patti Kumler Latta, Edma M. McDonald.

**Gallipolis, O.;** Kehut Rubber and Tire Co.; $100,000; Charles G. Clark, Paul Dye, John V. Dale, L. Ward Crane.

**Portsmouth, O.;** Portsmouth Auto Supply Co.; $5000; J. F. Taylor, W. S. Hollenbach, D. E. Newman, Mrs. Romie E. Taylor, Simon Labold.

**Ardmore, Okla.;** Master Truck Sales Corporation; $20,000; R. O. Dulaney, J. D. Crump, E. I. Winfrey.



**Large Modern Ideal Plant of the SKF Ball Bearing Co., at Hartford, Conn., Where SKF Radial and Thrust Ball Bearings Are Manufactured.**

# RECORD OF NEW BUILDING PLANS IN MARCH

## Contracts Made and Plans Contemplated for Alterations or the Building of Garages, Repair Shops, Service Stations and New Plants.

### CONTEMPLATED PLANS AND SPECIFICATIONS.

**Denver, Col.;** G. W. Githens, 220 15th street; one-story garage and storage station, 37x84; $4000.

**Chicago, Ill.;** Albert Lang, 7 W. Madison street; one-story private garage; $2000.

**Chicago, Ill.;** A. Charvat, 1803 S. Ashland avenue; one-story private garage, 24x26; $2000.

**Indianapolis, Ind.;** Standard Oil Co.; one-story service station, 16x16; $2500.

**Manhattan, Kan.;** D. F. Bergier, 1000 Bluemont avenue; one-story garage, 50x150; $9000.

**Maysville, Ky.;** D. K. Barlett; two-story commercial garage, 50x120; $10,000.

**Baltimore, Md.;** C. Wood, 718 Eversham avenue; one-story public garage, 50x22; at Oak and 21st streets; for Enterprise Fuel Co., Hanover and Fayette streets.

**Boston, Mass.;** William London; one-story public garage, 280x80.

**Boston, Mass.;** Rowe Contracting Co., Brighton, Mass.; one-story public garage, 64x97; $15,000.

**Detroit, Mich.;** C. Strong, 1431 Hoy road; one-story public garage, 27x131; $10,000.

**Detroit, Mich.;** James H. McDonald, 1325 Woodward avenue; one-story garage, 38x110; $6000.

**St. Paul, Minn.;** George R. Holmes, 379 Robert street; one-story commercial garage, 60x100; $15,000.

**St. Louis, Mo.;** William J. Day, 923 Bell avenue; one-story garage, 32x22; $2500.

**Lincoln, Neb.;** Dr. G. A. Farnham, Funk building; two-story garage, 100x142; $4000.

**Brooklyn, N. Y.;** David Samerell, 452 Bush street; one-story garage, 40x100; $5000.

**Brooklyn, N. Y.;** Antonetta Simonelli, 28 Conselyer street; one-story garage, 25x107; $6000.

**Brooklyn, N. Y.;** Sarah C. Stewart, 133 W. Fourth street; one-story garage, 79x140; $25,000.

**Brooklyn, N. Y.;** N. Schwarstein, Manhattan Beach; one-story garage, 102x164; $50,000.

**Brooklyn, N. Y.;** Irene Levine, 1517 Eastern Parkway; one-story garage, 93x45; $4000.

**Brooklyn, N. Y.;** George Hochescheuder, Corkside and Bedford avenues; one-story garage, 51x70; $5000.

**Brooklyn, N. Y.;** John Splar, 661 Willoughby avenue; one-story garage, 100x127; $20,000.

**Brooklyn, N. Y.;** Pickir Ditzopf, 426 Sutter avenue; one-story garage, 50x100; $20,000.

**Brooklyn, N. Y.;** Charles Weiner, 874 Bedford avenue; one-story garage, 52x100; $11,000.

**Brooklyn, N. Y.;** Maria R. Pendegar, 323 Manhattan avenue; one-story garage, 25x100; $7500.

**Brooklyn, N. Y.;** James McMullen, 174 Prospect place; one-story private garage, 20x50; $2500.

**Brooklyn, N. Y.;** John K. Kilcourse, 1467 Dean street; one-story garage, 100x150; $20,000.

**Brooklyn, N. Y.;** David F. Edgerly, 378 Seventh avenue; one-story garage, 107x101; $30,000.

**Brooklyn, N. Y.;** Henry Newman, 309 Rutledge street; one-story garage, 66x100; $12,000.

**Brooklyn, N. Y.;** Bertha Stein, 756 Flushing avenue; one-story garage, 50x100; $25,000.

**Brooklyn, N. Y.;** Harry Rubin, 317 Bedford avenue; one-story garage, 110x114; $30,000.

**Brooklyn, N. Y.;** Morris Rabinowitz, 233 S. Fourth street; one-story garage, 40x200; $20,000.

**Brooklyn, N. Y.;** Taborisky Brothers, 588 Powell street; one-story garage, 12x15; $4000.

**Brooklyn, N. Y.;** Cornelius A. Haggerty, 683 Park place; one-story public garage, 55x100; $12,000.

**Brooklyn, N. Y.;** James O'Connell, 539 W. 147th street, New York; two one-story garages, 20x67; $5000.

**Brooklyn, N. Y.;** Kep-Arrow Garage, Inc., 330 Utica avenue; one-story public garage, 50x122; $13,000.

**Brooklyn, N. Y.;** Hyman Aaron, 1204 Eastern Parkway; one-story garage, 166x138; $6000.

**Brooklyn, N. Y.;** Albany Avenue and Atlantic Construction Co., 1596 Atlantic avenue; one-story garage, 75x100; $20,000.

**Brooklyn, N. Y.;** Dr. Kornobias, 912 Bedford avenue; one-story private garage, 21x70; $4000.

**Buffalo, N. Y.;** Buffalo Builders' Supply Co., care H. A. Brocas, Ellicott square; one-story garage, 68x52; $10,000.

**Buffalo, N. Y.;** T. R. Wallace; one-story public garage and show room, 72x120; lessee, Quale Garage Co., Inc., 2675 Main street.

**Buffalo, N. Y.;** Cutler Desk Co., 20 Churchill street; one-story garage, 20x40; $1600.

**Far Rockaway, L. I., N. Y.;** Keenan & Colton, Rockaway Park, L. I.; one-story garage, 92x122; $8000.

**Glendale, L. I., N. Y.;** John Storch; one-story garage; $10,000.

**Kew, L. I., N. Y.;** Charles H. Nolte; 1½-story garage, 23x31; $2000.

**Long Island City, L. I., N. Y.;** Frank Hipp; one-story garage, 30x59; $4500.

**Mt. Vernon, N. Y.;** C. J. Palm, Tuckahoe, N. Y.; one-story public garage, 50x90; $8000.

**New York, N. Y.;** Roseff Realty Co., 15 W. 110th street; one-story garage, 26x116; $5000.

**New York, N. Y.;** Charles Wegel; two one-story garages, 20x50; $5000.

**New York, N. Y.;** Nesta Construction Co., 655 E. 189th street; one-story garage, 99x160; $20,000.

**New York, N. Y.;** Arthur W. Corse, 20 Vesey street; one-story garage, 100x100; $10,000.

**New York, N. Y.;** A. L. S. Realty Corporation, 153 Riverside drive; four-story garage, 68x100.

**New York, N. Y.;** Elena Realty Co., 226 Lafayette street; one-story garage, 64x75; $7000.

**New York, N. Y.;** Herbert S. Harde, 56 W. 45th street; one-story garage, 100x100; $5000.

**New York, N. Y.;** Mary Morris Ostrander and Henry Lewis Morris, 32 Liberty street; two-story garage, 59x105; $25,000. Lessee, Max L. Balene, 37 Wegman Parkway, Jersey City, N. J.

**New York, N. Y.;** Estate Andrew Brookman; one-story public garage, 92x170; $23,000.

**New York, N. Y.;** New York Railways Co., 165 Broadway; two-story garage, 25x103; $8000. Lessee, Sanitary Wet Wash Laundry Co., Inc., 811 E. Ninth street.

**New York, N. Y.;** David Stevenson estate; one-story public garage, 98x100.

**New York, N. Y.;** Duval Co., Pier 39, North river; four-story garage, 89x119; $100,000.

**New York, N. Y.;** Frederick Pflueger, 366 E. 142nd street; two-story garage, 76x126.

**New York, N. Y.;** Bravel Schwartz, 44 Court street, Brooklyn; one-story garage, 50x97; $30,000.

**New York, N. Y.;** George Carrezzo, 426 Third avenue; one-story public garage, 50x90; $7000.

**New York, N. Y.;** New York Central and Hudson Railroad Co., Grand Central Terminal; two-story garage, 50x160. Lessee, George Brockhaus, Inc., 1837 Park avenue.

**Syracuse, N. Y.;** W. H. Bissell, 100 S. State street; one-story garage; $18,000.

**West New Brighton, S. I., N. Y.;** Richmond Light and Railroad Co., St. George Terminal, S. I.; one-story garage, 40x85; $7000.

**Charlotte, N. C.;** Thies-Smith Co.; two-story brick garage; $10,000.

**Akron, O.;** A. J. Akers, 40 Kent street; one-story garage, 18x45; $3000.

**Akron, O.;** East Akron Cemetery Co.; one-story private garage, 18x40; $4000.

**Akron, O.;** Pierce Snyder, Howard and Market streets; two-story garage, 40x45; $10,000.

**Cincinnati, O.;** Cincinnati Butchers' Supply Co., 2000 Central avenue; one-story garage, 60x23; $5000.

**Dayton, O.;** G. H. Shartzer Co., 882 S. Ludlow street; two-commercial garages; one-story, 40x150; $25,000; two-story, 45x50; $35,000.

**Ardmore, Okla.;** R. J. Glassco, 221 Eighth street, N. W.; two two-story garages, 50x100; $40,000.

**Blackwell, Okla.;** J. Amos; one-story garage, 50x140; $6000.

**Chickasha, Okla.;** Harry Hammerly, 405 First National Bank building; one-story garage, 16x28; $1000.

**El Reno, Okla.;** W. H. Riley; one-story garage, 125x125; $15,000.

**Fairview, Okla.;** R. W. Shaw, 304 Beck building, Enid, Okla.; one-story garage, 75x125; $7000.

**Guthrie, Okla.;** Magnolia Petroleum Co.; one-story filling station, 20x36; $3500.

**Oklahoma City, Okla.;** Edward M. Semans Co., 217 Colcord building; two-story garage, 75x140; $40,000.

**Purcell, Okla.;** R. C. Baird, Paul Valley, Okla.; one-story garage, 100x140; $15,000.

**Eddystone, Pa.;** Morris Handle, 427 Kaigne avenue, Camden, N. J.; one-story public garage, 60x86; $7000.

**Harrisburg, Pa.;** Jacob O. Matter, 1923 Derry street; one-story private garage, 40x40; $2000.

**Harrisburg, Pa.;** M. Brennor & Sons, 633 Herr street; four-story public garage, 90x65.

**Harrisburg, Pa.;** Yoffee Bros., 296 Cameron street; two-story public garage, 61x91x131; $25,000.

**Philadelphia, Pa.;** J. E. Fieldstein, 1326 Chestnut street; three-story brick and terra cotta service station; $15,000.

**Philadelphia, Pa.;** Nass Estate, care A. Sauer & Co., 908 Chestnut street; one-story garage, 34x60; $6000.

**Philadelphia, Pa.;** Henon & Boyle, 10 S. 18th street; two-story auto service building, 38x100.

**South Bethlehem, Pa.;** George Merdinger, Wilbur Trust building; one-story private garage; $4000.

**Greenville, S. C.;** G. A. Ellis; two-story brick garage; $5000.

**Dallas, Tex.;** D. P. Butler Motor Co., Marietta, Ga.; one-story brick garage, 80x120; plate glass front.

**Laredo, Tex.;** J. A. Oritz; one-story garage; $16,000. Lessee, A. D. Sorry and L. W. Carroll.

**Wichita Falls, Tex.;** Mrs. M. L. Reid; one-story brick garage, 150x50. Lessee, Wichita Falls Motor Co.

**Old Point Comfort, Va.;** United States government; storage garage and machine shop; $15,000.

**Petersburg, Va.;** Standard Oil Co. of New Jersey, 125 Main street; one-story garage, 24x32; $5000.

**Huntington, W. Va.;** John Rou, Sr., Hotel Frederick, barber shop; three-story sales and service garage, 50x86; $17,000.

**Mount Hope, W. Va.;** F. H. Gill; one-story garage, 155x140; $11,000.

**West Allis, Wis.;** Frank C. Krohne, 56th and Greenfield avenue; one-story garage, 80x115; $5000.

## CONTRACTS AWARDED.

**Denver, Col.;** Alexander Duther, 550 S. High street; one-story garage, 50x125; for T. D. Morrison; $8000.

**Denver, Col.;** D. M. Sugg, 472 Humboldt street; two-story garage, 80x266; for Willcox Investment Co.; $43,000.

**Denver, Col.;** Jesse E. Fleming, 100 Broadway; two-story garage, 50x150; for Fleming Brothers; $35,000.

**Bridgeport, Conn.;** J. A. Merson, 265 Sterling street; one-story garage, 26x45.

**Bridgeport, Conn.;** David Schine and Son; one-story garage, 20x50; for William Lieff, 487 Grand street.

**Bridgeport, Conn.;** Schwartz Brothers Co., 95 River street; one-story garage, 128x60; for Noble estate.

**New Britain, Conn.;** B. H. Hibbard Co., 140 Main street; one-story garage, 30x24; for George M. Landus, 403 Main street.

**New Britain, Conn.;** Axel F. Nelson, 280 Corbin avenue; one-story garage, 18x25; for Samuel Bamforth, 55 S. Burritt street.

**Washington, D. C.;** S. A. Gaskins, 510 Washington Loan and Trust building; one-story private garage for William F. Seidenberg, 355 Sheppard street; $2000.

**Henry, Ill.;** John Jeffrey Co., 127 N. Dearborn street, Chicago; two-story public garage, 40x80; for J. E. Barry & Co.; $10,000.

**Burlington, Ia.;** Fred W. Woellhaf, 213 S. Third street; two-story garage, 60x170; $12,000.

**Tiffin, Ia.;** J. H. Hunzinger, Iowa City, Ia.; one-story garage and repair shop, 40x60; $8000.

**Baltimore, Md.;** Louis C. Wood, 718 Eversham avenue; one-story public garage, 32x50; for Enterprise Fuel Co., care Harry Hodge, Hanover and Fayette streets; $2000.

**Athol, Mass.;** Marshall Twitchell; one-story service station, 147x44; for Athol Garage, 51 School street; $10,000.

**Worcester, Mass.;** E. Gullberg & Son, 12 Rosemont road; one-story public garage, 76x103; for John A. Sears; $10,250.

**Detroit, Mich.;** James S. Holden Co., 500 Holden building; one-story public garage, 57x160; for William Pitts and Jessie E. Pitts, 455 Virginia Park.

**Minneapolis, Minn.;** Campbell Construction Co., 3050 Hennepin avenue; one-story private garage, 58x24; for Van Tilburg Oil Co., 2428 University avenue, St. Paul, Minn.

**Minneapolis, Minn.;** J. B. Miller, 520 Lumber Exchange; one-story public garage, 56x80.

**Kansas City, Mo.;** J. E. Taylor Construction Co., 711 Ridge Arcade; one-story garage, 20x20; for Gustin Bacon Manufacturing Co., 1416 W. 12th street; $1000

**Lincoln, Neb.;** James T. Allan, 224 Branders Theatre building; two-story garage, 80x132; $40,000.

**Omaha, Neb.;** Metropolitan Realty Investment Co., Bee building; one-story garage, 20x100; $2000.

**Omaha, Neb.;** Nebraska Service Station; one-story service station, 95x132; $32,000.

**Omaha, Neb.;** Alexander Beck, 208 Keeline building; one-story auto service station for Nebraska Auto Service Station; $20,000.

**Bayonne, N. J.;** H. D. Best Co., 52 Vanderbilt avenue, New York; one-story garage, 48x68; for Standard Oil Co. of New Jersey.

**Camden, N. J.;** Joseph Grassi, 310 Market street; one-story garage, 30x50; for Antonio Mocca; $4000.

**Newark, N. J.;** Samuel Marshall, 326 Devon street, Kearny, N. J.; one-story public garage, 25x90; for Federal Real Estate Co., 295 Passaic street, Newark; $6000.

**Pelham Manor, N. Y.;** Tucker & Hasbrook, 29 Broadway, New York City; two-story garage, 39x24; for W. B. Trowbridge.

**Rochester, N. Y.;** Frank W. Crouch, 80 Bronson avenue; four one-story garages, 20x20; for Board of Contract and Supply, City Hall; $3500.

**Akron, O.;** Shaeffer Black Co.; one-story private garage, 27x158; $8000.

**Cincinnati, O.;** Karl Building Co., 1638 Davey street; one-story private garage, 23x23; for Jerome W. Strum, 4064 Beachwood avenue; $1400.

**Cincinnati, O.;** G. A. Peters, 312 Mercantile Library building; one-story private garage, 20x20; for George Diehl, 290 Terrace avenue; $1400.

**Cincinnati, O.;** Terro Concrete Co., Ninth and Harrison streets; three-story service and sales station, 50x150; for T. Field.

**Dayton, O.;** G. H. Schwartzer, 832 S. Ludlow street; two-story commercial garage, 50x80; for Dayton Troy Auto Co., Second and Clair streets; $20,000.

**Enid, Okla.;** G. A. La Brant; one-story gasoline filling station, 16x32; for Texas Co.; $4500.

**Oklahoma City, Okla.;** Gross Construction Co., 132 W. Second street; one-story garage, 25x140; for Mrs. A. V. Overstreet, 126 E. Third street; $8000.

**Pittsburgh, Pa.;** F. Hoffman & Co., Wilkinsburg, Pa.; two-story private garage, 24x25; for R. G. Sommerfield, 800 East End avenue; $3500.

**Philadelphia, Pa.;** Louis Rosengarten; one-story brick garage, 14x60; at 5617 Race street; $500.

**Philadelphia, Pa.;** John S. Walter; one-story garage, 16x20; at 6117 Oxford street; for C. Cary; $800.

**Philadelphia, Pa.;** Joseph R. Smith; one-story concrete garage, 169.8x80; south side Diamond street, east of Sedgley avenue; for Columbia Garage Co.; $20,000.

**Philadelphia, Pa.;** Warren Irvin; one-story brick garage, 17.5x50; rear 1213 Brown street; for Robert Werner; $800.

**Philadelphia, Pa.;** M. Moister & Co.; iron on iron frame garage, 21x36; at southeast corner Second and Clearfield streets; for Allegheny Iron and Metal Co., $800.

**Philadelphia, Pa.;** A. Kaplan; one-story brick garage, 60x160; at 942 Porter street; $10,000.

**Philadelphia, Pa.;** George Bemunden; one-story brick garage, 12x20; at 2121 West Venango street; for A. E. Michener; $600.

**Philadelphia, Pa.;** S. F. Reich; one-story brick garage, 51x70; at 4348-52 N. Seventh street; for John Heimel; $6375.

**Philadelphia, Pa.;** Harry A. Dawson; one-story iron on frame garage, 75x32; at 313 Tabor road; $2500.

**Philadelphia, Pa.;** Robert Crawford; one-story brick garage, 18x68; at 539 E. Hermit lane; for Mary J. Crawford; $500.

**Philadelphia, Pa.;** J. J. McHugh; one-story brick garage, 32.2x54.2; north side Woodland avenue; west of 59th street; $1400.

**Greenwood, S. C.;** Mauldin & Chapman; one-story garage, 72x20; for E. Z. Seymour and others. Lessees, Southern Auto and Supply Co.

**Greenville, S. C.;** Jamison & Morris; one-story brick garage, 55x100; at Broad and Jackson streets; tile floor; gravel roof; metal windows; for L. O. Patterson; $6700.

**De Smet, S. D.;** John Platt; one-story garage, 50x100; for D. A. Maxwell Hardware Co.

**Bellville, Tex.;** John T. Colleton; one-story brick and interlocking tile wall garage, 50x125; tar and gravel roof; cement floor; for Adolph Louwein; $8000.

# NEW BUSINESS CONCERNS AND CHANGES OF NAMES.

## The Month's Record of Transfer of Ownerships and Opening of Garages, Agencies, Branches, Service Stations and Repair Shops.

### RECENT TRANSFERS OF BUSINESS OWNERSHIPS.

**Chico, Cal.;** E. E. Canfield has sold his repair shop to F. I. Fletcher.

**Chico, Cal.;** The Chico Tire and Supply Co. has been purchased by C. H. Nealis.

**Marysville, Cal.;** The Western Garage has been purchased by Groeger & Guerin.

**Hillsboro, Ind.;** E. E. Williamson and A. A. Franke have purchased a garage formerly conducted by Taulbee and Franke. Improvements will be made in the rear department.

**Adel, Ia.;** G. W. Cronkweiht has sold his vulcanizing plant to T. C. Reynolds.

**Algona, Ia.;** Kohlhas Brothers have purchased the Willhite Garage and will occupy it as a Buick salesroom and service station.

**Dohrville, Ia.;** Robert McVay and George Ault have purchased the garage of C. A. Pratt.

**Greenfield, Ia.;** Ford Russell has purchased the interest of his partner in the Russell & Lae Auto Supply and Repair Shop.

**New Hampton, Ia.;** J. L. Curtis has become the sole owner of the Reilly & Curtis Auto Garage.

**Newton, Ia.;** The Colfax Auto Co. has been purchased by the Smith Motor Co., which will operate it as a branch.

**Morning Sun, Ia.;** John Jamieson has sold his tire repair and accessory business to Watt of Newport.

**Red Oak, Ia.;** L. J. Botts has sold his garage to C. A. Johnson.

**Olds, Ia.;** Dan Nobel has sold his garage to Hohn Hissong.

**Clay Centre, Kan.;** Del Laflin has bought the Kuhlman interest in the Kuhlman & Avery Garage.

**Winfield, Kan.;** Jack Worswick has bought the Gordon Garage.

**Haverhill, Mass.;** George A. Pomerov has purchased an automobile repair shop.

**Bellevue, Mich.;** The Bellevue Garage has been purchased by Ray E. Stevens.

**Mt. Clemens, Mich.;** The City Garage has opened under new management. A. Evans being the proprietor.

**Pontiac, Mich.;** A. T. Miller has sold his interest in the Opera House Garage to Ebner E. and Carlton E. Moore. E. D. Moore will take charge of the service department.

**Hendricks, Mo.;** H. J. Kruth & Son have sold their garage to Tobias Sand.

**Mansfield, Mo.;** Hoover, Duckworth & Strong have sold their garage to S. J. Walker.

**Marceline, Mo.;** The Beetler & McKinney Garage has been purchased by W. O. Wooten.

**Molden, Mo.;** F. M. Maddox has sold the W. H. Liddle Garage to Harry Knight.

**Benson, Neb.;** William Miller has bought a half interest in the Wulff Garage.

**Chadron, Neb.;** Guy Romine has become owner of the Plummer Garage. Business will be conducted by him under the name of the City Garage.

**Newark, N. J.;** The Marmon Automobile Co. has leased the one-story service station at 28 Halsey street. It will be used exclusively for service work. The company's show room on Broad street will be continued.

**East Grand Forks, N. D.;** The Northern Auto Co. has been purchased by the Krask Auto Co.

**Granville, N. D.;** C. H. French has sold his garage to J. J. Hostetler.

**Canton, O.;** F. L. Fuhr has retired from the Stark County Motor Car Co. His interest has been purchased by Dr. E. O. Lothamer and A. L. Crowthers.

**Chandler, Okla.;** Crane & Anderson have sold their garage to the Crane Garage Co.

**Muskogee, Okla.;** J. H. Hoffman has purchased the three-story Stephenson building. He is planning to remodel it for a sales room and service station.

**Purcell, Okla.;** Perry Duckett has sold his interest in the firm of Wells & Duckett to H. Wells.

**Philadelphia, Pa.;** Samuel R. Blockson has purchased the new three-story automobile service station at 667-669 North Broad street.

**Philadelphia, Pa.;** R. J. Wescher has secured the accessory store formerly owned by the Bartlett Garage, 2035 Market street.

**Athens, Tex.;** A. F. Wood has purchased J. F. Neff's interest in the Service Garage.

**Bellingham, Wash.;** H. F. Kluge has taken over the entire business of the Tire Service House and will be conducted under his own name as H. F. Kluge, Vulcanizing, Tires and Accessories.

**Bellingham, Wash.;** C. E. Thomas has purchased the Highway Garage and taken over the Studebaker distribution in Whatcom county.

**Black River Falls, Wis.;** James Pugh has sold his service shop to C. A. Everson.

**Elroy, Wis.;** Charles Sterba and Torga Severson have formed a partnership and will engage in the retail hardware and motor car accessory and supply business.

**Delavan, Wis.;** Underwood & Stafford have purchased the garage of Groff & Hatch.

**Milwaukee, Wis.;** Bluem & Hartung are now in possesion of their recently completed sales and service station.

**Rhinelander, Wis.;** The American Auto Livery Co. will distribute Oakland cars in Oneida county.

**Spokane, Wash.;** S. C. McGinnis and C. Hood have taken over the business of the Rock Spring Garage at 1309 Ash street. C. Hood will have charge of the service department.

**Walworth, Wis.;** Andrew and Walter Lackey have sold their garage to Carl Burns.

**West Bend, Wis.;** Kuester Brothers have remodeled their garage repair shop and have added new equipment.

### NEW BUSINESS LOCATIONS, REMOVALS AND IMPROVEMENTS.

**Ft. Smith, Ark.;** The Interstate Garage and Storage Co. will move into new quarters on Eighth and A streets.

**Chico, Cal.;** The Vaughn Vulcanizing Works is settled in its new home at Seventh and Broadway.

**Marysville, Cal.;** The Auto Electric Battery Co. is settled in its new quarters at 300 E. street. The company will handle Willard batteries.

**Washington, D. C.;** The Neumeyer Motor Co., distributor for the Mitchell car, has remodeled the building at 211-13 B street. It will be used for a service station.

**New Albany, Ind.;** The Overland Motor Co. is remodeling the building at Third and Main streets as a new show room.

**Des Moines, Ia.;** The Hast-Hanley Garage has moved to new quarters at 515-17 East Grand avenue.

**Humeston, Ia.;** The Bijur rink has been remodeled by George Foster to fit the requirements of the Foster Motor Co., which occupies the building now.

**Lawrence, Kan.;** Willis Motor Co has opened new quarters at Tenth and Massachusetts streets.

**Terrell, Ky.;** T. L. Seitzler has made his new headquarters on East Moore street.

**Detroit, Mich.;** The McKinnon Garage Co. is remodeling its building.

**Detroit, Mich.;** Smith & Glines Service and Sales Co. is now located in its new home at 1231 Woodward avenue. It has the agency for the Collier truck.

**Grand Rapids, Mich.;** Henderson Garage has been obliged to obtain new quarters in the new fireproof building at 1121-29 Division avenue. This was necessary on account of the rapidly increasing business.

**Manistee, Mich.;** The Thompson Auto Co. will shortly occupy new quarters in the National Grocer Co. building, which is being remodeled.

**Minneapolis, Minn.;** The Liberty Tractor Co. has moved to 2115 Como avenue, S. E.

**Minneapolis, Minn.;** Nilson Tractor Co. have opened headquarters at 2128 University avenue, S. E.

**Carrollton, Mo.;** Motor Car Repair Co. has secured new quarters.

**Kansas City, Mo.;** The Bittel-Leftwich Co. is planning to move into its new three-story fireproof structure at 26th street and McGee trafficway.

**St. Louis, Mo.;** The Mitchell Automobile Corporation will move from the Plaza Hotel building to a building at 3126 Locust street.

**Omaha, Neb.;** Prince Auto Co. has moved to new quarters at 2054 Farnum street, previously occupied by the Western Motor Car Co.

**Omaha, Neb.;** Western Motor Car Co. has moved from 2054 Farnum street to the opposite side of Auto Row.

**Cincinnati, O.;** The Franklin Automobile Co., has secured new quarters on Gilbert avenue. The new establishment will be 60 by 96 feet of fireproof construction.

**Toledo, O.;** John F. Davis is planning to erect a 100 foot addition to his present salesroom at 1211-13-15 Monroe street. He is the head of the Davis Motor Sales Co.

**Weatherford, Okla.;** John Sallaska has moved his salesrooms and service station to the building formerly occupied by W. E. Sturgis.

**Waco, Okla.;** Hall & Turner have moved their tire and accessory business into the Masonic building.

**Portland, Ore.;** Keaton Tire and Rubber Co. has secured new quarters at Sixth and Main streets.

**Corsicana, Tex.;** L. H. Lee has moved his salesrooms to the new Cookesy building on East 11th street.

**San Antonio, Tex.;** The Southwest Oakland Co. is settled in its new home at Commerce and St. Mary's streets.

**San Antonio, Tex.;** The Motor Car Supply Co. has moved to larger quarters at 205 East Travis street.

**Terrell, Tex.;** T. L. Seitzler has moved his business to East Moore street.

**Spokane, Wash.;** The Hodgins Motor Car Co., Haynes distributor, has moved from its salesrooms at First and Lincoln streets to a new garage on Habermale Island.

**Spokane, Wash.;** H. E. Peterson and A. C. Cartmill will move into their own building at Second and Washington streets and will add the Harroun car.

**Spokane, Wash.;** The Universal Auto Co. has obtained new quarters at 175 Second avenue.

**Sturgeon Bay, Wis.;** The Wawyer Garage is enlarging its repair shop and installing new tool equipment.

### FACTORIES, GARAGES AND REPAIR SHOPS.

**Sherrill, Ark.;** W. H. Whiffield has opened a garage on Centre street.

**Chico, Cal.;** Park Service Station has opened an accessory store.

**Abingdon, Ill.;** P. E. Roe has opened a new garage and sales agency in a building which was extensively remodeled. He will act as distributor of the Oldsmobile in McDonough and adjoining counties.

**Muscatine, Ia.;** The Motor Inn Garage is now opened for business. The company will handle Nash cars and Schebler carburetors and will conduct a general automobile repair business.

**Grant City, Kan.;** Seele & Austin have opened a repair shop at the Oldsmobile Garage.

**Great Bend, Kan.;** L. J. Austin has added a repair shop to his garage.

**Independence, Kan.;** The Independence Motor Co. is erecting a new building. It will be two stories high and occupy a 50 foot lot.

**Detroit, Mich.;** Eastern Motor Sales Co. will erect a new four-story brick and reinforced concrete service station and will be located at Antietam and Russell streets.

**Centerville, Md.;** Charles H. Dean will erect either a brick or concrete garage on the property known as the Old Frame Hotel on Commerce street.

**Lake Benton, Minn.;** George Nelson has opened an automobile repair shop at the Rush building.

**Broken Bow, Neb.;** W. T. Moore has opened a repair shop.

**York, Neb.;** J. R. McCowan has opened a repair shop.

**Seattle, Wash.;** The Mercer Cycle Co. is installing new machinery in its repair shop.

**Olympia, Wash.;** The Rose-Nepple Auto Co. will erect a new concrete and tile building to be used as a shop and warehouse.

**Waterville, Wash.;** Waterville Hardware Co. has opened a new garage.

**Caroline, Wis.;** August Haase has opened a garage.

**Eagle River, Wis.;** Strong & Manley are having a garage built on the site of Saffney's furniture store.

**Manitowoc, Wis.;** Andrew Beck will open a tire store and service station.

**Monroe, Wis.;** Edward Dargle has opened a garage.

### AGENCIES, DEALERS AND SERVICE STATIONS.

**Chico, Cal.;** George S. Jeffery is installing a vulcanizing plant. He acts as agent for the Chalmer cars.

**Gridley, Cal.;** The Thresher's Motor Supply Co. is the new name of the company, formerly known as the Gridley Cyclery.

**Marysville, Cal.;** F. H. Johnson has opened salesrooms at 424 Second street.

**San Francisco, Cal.;** The Frank O. Renstrom Co. has secured the city distribution of Lee tires. These include the Lee Puncture Proof, as well as the Lee Standard tires.

**San Pedro, Cal.;** The Ross Storage Battery Service is the newly appointed agent for Willard storage batteries. Its headquarters are at Seventh and Centre streets.

**Norwich, Conn.;** The Moran Storage Battery Co., Durfee and Elm streets, has been made the local distributor of the Willard storage batteries.

**Torrington, Conn.;** Durand Storage Battery Co., 14 Litchfield street, has been appointed a Willard battery service station.

**Bedford, Ind.;** The Strout Battery Service Co., 16th and K streets, has been appointed a Willard storage battery service station.

**Des Moines, Ia.;** Frank Lozier has opened a Ford agency at 622 East Grand avenue. He will handle used cars.

**Cambridge, Mass.;** The Indiana Truck Co., distributor of Indiana trucks, has opened a salesroom at 182-184 Massachusetts avenue. A. G. Ingram is the proprietor.

**Adrian, Mich.;** The Republic Motor Sales Co. is opening a sales and service station in the Union Garage and will maintain an office, show room and salesroom. C. C. Lamberton will be in charge.

**Detroit, Mich.;** Beach & Foreman will open a motor truck sales office to be the home of the Acason truck at 811 Woodward avenue.

**Detroit, Mich.;** E. A. Bowman Co., 844 Woodward avenue, and the General Sales Co., 212 East Jefferson avenue, have taken agencies for the Noglare head lamp lens.

**Ontonagon, Mich.;** Clarence Crocker has opened a salesroom for Ford cars in the Daley building.

**Sault Ste. Marie, Mich.;** Robert E. Fowler has opened an oxy-acetylene plant.

**St. Paul, Minn.;** The Tuma Motor Car Co. has opened a sales department, which formerly operated a service station at Tenth and Wabash streets. The company will handle several makes of cars.

**Omaha, Neb.;** Noyes-Killy Automobile Co. has opened a branch in Kansas City.

**Newark, N. J.;** Alex Brunner & Son have been appointed to give service on Flechter carburetors by L. V. Flechter & Co.

**Findlay, O.;** The Bishop Battery Service Co. has been appointed a Willard storage battery service station.

**Hamilton, O.;** The Prest-O-Lite Co., Inc., has appointed the Hamilton Battery and Tire Station, 113-115 Market street, a battery service station.

**Portland, Ore.;** The Portland Garage has opened a storage warehouse.

**Scranton, Pa.;** Smith & Howley, 250 Wyoming avenue, have been appointed as distributors of acetylene gas by the Prest-O-Lite Co., Inc.

**Angleton, Tex.;** Roy Lynn has opened new salesrooms in the Crockard building.

**Beeville, Tex.;** A. E. Freis has added a vulcanizing plant to his business.

**Gonzales, Tex.;** B. L. Coons has opened a vulcanizing shop.

**Pecos, Tex.;** Sparman & Green have opened salesrooms.

**Murray, Utah.;** Pioneer Motor Co. has opened an agency for Chevrolet cars at 4879-81 South State street. The building is now being remodeled to contain a service station and storage.

**Seattle, Wash.;** Seattle Motor Car Co. will distribute Elgin and Harroun cars in Seattle and King county and will take over the salesroom and shop of the Pacific Motors Co.

**Spokane, Wash.;** The Hodgins Motor Car Co. is already settled in its new garage on Havermale Island. Its former home was at First and Lincoln streets.

**Spokane, Wash.;** The Western Truck and Tractor Co. has been organized to represent Garford lines in the Spokane district. In the near future permanent quarters will be established at Jefferson street and Sprague avenue. David Zent is president and manager.

# TRADE INFORMATION EXCHANGE

## A National Clearing House of the Trade's Needs for Manufacturers, Jobbers and Agents

### GASOLINE PASSENGER CARS.

**Gainesvile, Ga.;** Deal Garage Co. is now in the market for gasoline passenger cars; selling price, $700 to $1350.

**Centerville, Md.;** Charles H. Dean would like to secure the agency for gasoline passenger cars; seling price, $600 to $1000.

### GASOLINE COMMERCIAL VEHICLES.

**Augusta, Ga.;** The Dixie Motor Co. is anxious to secure the agency for commercial cars; selling price, $500 to $850.

**Centerville, Md.;** Charles H. Dean wants an agency for gasoline commercial cars; selling price, $600 to $1000.

### SPECIAL OPPORTUNITY.

**Augusta, Ga.;** The Dixie Motor Co. would consider the agency for some steam passenger cars.

**Charleston, S. C.;** Gas Engine and Electric Co., 174 King street, would consider the agency for standard auto accessories in the state of South Carolina.

**Spokane, Wash.;** Larson Brothers, Inc., W. 1227 Sprague avenue, is anxious to secure a truck line.

### ACCESSORIES, EQUIPMENT AND SUPPLIES.

**Augusta, Ga.;** The Dixie Motor Co. wants axles, batteries, bolts, bulbs, chains, cones, cups, dimmers, fenders, fuses, gaskets, gauges, headlights, horns, lamps, patches plugs, reamers, reflectors, soaps, springs, vulcanizers, wrenches.

**Gainesville, Ga.;** Deal Garage Co. is in the market for bodies and bulbs.

**Centerville, Md.;** Charles H. Dean would like to secure batteries, charging apparatus, cylinder machines, elevators, fenders, gaskets, gauges, glass, recording time clocks, separators, shims, sockets, springs, starters, storage systems, tools, valves and special bodies for commercial cars.

**Lowell, Mich.;** The Overland-Lowell Co. is interested in bulbs, bumpers, chains, charging apparatus, dimmers, emblems, gauges, goggles, graphite, jacks, locks, odometers, plugs, polishes, primers, pumps, removers (carbon), searchlights, shock absorbers, speedometers, testers, tire accessories, trunks, vaporizers, vulcanizers, waste, wearing apparel, whistles.

**Sobewaing, Mich.;** Gremel & Schnepp would like to obtain special bodies for commercial cars.

**Utica, N. Y.;** Cook Brothers Co., 211 Post street, are interested in air compressors, anti-rattlers, cabinets, chains, charging apparatus, dimmers, gasoline, greases, heaters, jacks, oils, racks, removers (carbon), soaps, speedometers, starters, tire accessories, tires, pump and tank systems. The goods are to be sold.

**Ringling, Okla.;** G. A. Fletcher & Co., Main and Third streets, is anxious to secure air compressors, autogenous welding equipment, belts, bodies, bolts, brushes, bulbs, bumpers, cabinets, carburetors, celluloid, commutators, cushions, drills, dynamometer, engines, fans, furnaces, gaskets, guns, horns, hose, jacks, lathes, locks, machinery, paints, presses, punches, ratchet drills, reamers, rheostats, scrapers, shims, solder, springs, steering wheels, testers, timers, tire accessories, tires, varnishes, vulcanizers, wheels, wrenches and special bodies for commercial cars and passenger cars. The goods are to be used for resale to public.

**Woodward, Okla.;** O. J. Church Motor Co. wants drills, radiator cores, especially Ford starters, tops and parts for Ford roadsters.

**San Antonio, Tex.;** The Motor Car Supply Co., East Travis street, is to secure the agency for batteries, bolts, bulbs, bumpers, fire extinguishers, guns, horns, hose, jacks, nuts, patches, plugs, pumps, removers (carbon), seats, tire accessories, tires, vulcanizers, waste, wrenches.

**Bellingham, Wash.;** H. F. Kluge is anxious to secure batteries, charging apparatus, polishes, tire accessories, vulcanizers. The goods are to be used for retail and shop equipment.

# *Many Changes In the King Motor Organization*

### H. C. Bradfield, Advertising Manager, Resigns and Will Be Succeeded by W. D. Nesbitt.

Following the announcement of the resignations of Vice President and General Manager T. E. A. Barthel and Chief Engineer T. P. Chase of the King Motor Car Co., comes a statement that H. C. Bradfield, one of the best known men in the industry, has voluntarily resigned from this company. Mr. Bradfield's duties will be taken over by Vice President W. D. Nesbitt, with headquarters in New York, and Robert Welsh, formerly with Maxwell and Briscoe, who joins the company as assistant to the sales manager. H. D. Snodgrass, who has held this position, resigns to enter the military service. Joseph D. Porter, who resigned as New York branch manager for the company, has gone into business at Wichita, Kan.

**H. C. Bradfield, King Advertising Manager, Resigns.**

### MASON TIRE AND RUBBER CO. OPENS NEW OFFICE BUILDING.

The new general office building of the Mason Tire and Rubber Co., Kent, O., was opened recently and an entertainment was arranged by the Kent Board of Trade, as a dedication of the new structure. The Mason Tire and Rubber Co. were hosts to the Kent Board of Trade with its 300 members.

The new office building was decorated with the colors of the company, orange and blue, the service flag decorating the north wall. In the lobby was hung the American flag and all about the building was bunting.

Members of the Board of Trade were taken through the factory so that the people of Kent could see a rubber factory in full operation. In the office building were displayed crude rubber and samples of the products of the plant. About the main office building were placed used tires, showing the very high mileage that has been attained by Mason tires.

President O. M. Mason made an address of welcome and expressed his appreciation of the courtesies which had been extended by the Board of Trade of Kent from the first day he had had dealings with them.

Referring to the rapid and amazing growth of the Mason company, he said that the pay roll now amounts to from $35,000 to $40,000 per month. This will necessarily increase with the completion of the installation of the machinery now being placed in the new factory addition.

### "MAKE YOUR BUSINESS SAFE FOR SUCCESS."

This well worded slogan appears in an advertisement of a national advertiser on another page in this issue.

It sets the machinery of thought in motion and cannot help but cause the business man to take stock of his methods and his business, since it is obvious that we are all in business not for mercenary reasons, or for the mere occupying of our time, or just for the glory of it, but distinctly, for profit and success.

Success is measured by the yard stick of application. If we attempt to adhere to obsolete or loose methods in our business systems, it results in adverse conditions, hence it behooves all who are truly sincere in their desire to succeed to take advantage of those propositions that offer opportunities whereby improvement is gained and protection assured.

The garage and accessory business is no longer a "happening," it has a very distinct and prominent place in the directory of business, and to its everlasting credit, well may it be said, is manned by men of energy and determination.

In leafing through the very interesting literature of the Egry Register Co. of Dayton, O., it reveals the definite answer to the question of "better business." They show how an Egry Register System benefits a business by promoting efficiency, establishng confidence and creating protection.

This is what the register system does for you and your business:

It produces an undeniable, positive, accurate record of each transaction, thus showing the day's business at a glance—just the information that the business man should have, to know what has been sold, at what price and by whom, how much money has been received from sales and from payments on account, what has been paid out, what has been sold on credit that he may know whether outstanding accounts are increasing or otherwise.

The customer becomes a part of the system since a sales check of every transaction, neatly printed, is given to the customer or wrapped with the purchase, an exact duplicate of that transaction has been issued for the benefit of the proprietor that he may know exactly what articles are leaving his store, whether the proper price has been secured or not. It tells who has paid on account just the same as it will for what purpose money has been paid out, and in addition to this there is that record which is the heart of the system.

With the Egry Auditor in use there is no such thing as staying long after hours in order to find balance. It compels clerks to be more accurate, prevents unpleasant disputes and unnecessary explanations, protects customers, establishing every reason to expect them to protect the merchant. The sales check makes this possible. It inspires confidence in the storekeeper, as the customer knows he will get all that he pays for—and good treatment. It links the customer, the sales persons, the merchandise and the receipts direct to the system. It keeps an accurate accounting of stock; it tells daily what is being removed from it, in other words, practically establishes a perpetual inventory.

Significant of the fact that the garage man is progressive, the Egry Auditor System has been and is being liberally adopted. You are solicited to learn more about the system and the Egry Register Co., Dayton, O., will gladly, without obligation, tell you a lot of interesting facts of how the Egry system will help "Make your business safe for success."

Egry Auditor

**The Egry Auditor Used with the Egry Register System.**

# *Securities and General Materials Markets*

## *Automobile Securities Quotations*

| | Feb. 7 | | March 7 | |
|---|---|---|---|---|
| | Bid | Asked | Bid | Asked |
| Ajax Rubber Co | 46 | 55 | 53 | 55 |
| J. I. Case T. M. Co., pfd | 77 | 81 | 82 | 86 |
| Chalmers Motor Co., com | 3 | 5 | 5 | 8 |
| Chalmers Motor Co., pfd | 25 | 40 | 30 | 40 |
| Chandler Motor Co | 82 | 83 | 85 | 89 |
| Chevrolet Motor | 119 | 121 | 118 | 120 |
| Fisher Body Corp., pfd | 80 | 87 | 80 | 87 |
| Fisher Body Corp., com | 26 | 35 | 26 | 33 |
| Fisk Rubber Co., com | 49 | 51 | 50 | 53 |
| Fisk Rubber Co., 1st pfd | 98 | 103 | 98 | 103 |
| Fisk Rubber Co., 2nd pfd | 60 | 70 | 70 | 75 |
| Firestone Tire & Rubber Co., com | 95 | 98 | 96 | 98 |
| Firestone Tire & Rubber Co., pfd | 95 | 97 | 98 | 100 |
| General Motors Co., com | 134½ | 136½ | 116 | 118 |
| General Motors Co., pfd | 85 | 89 | 83 | 85 |
| B. F. Goodrich Co., com | 47 | 49 | 43 | 45½ |
| B. F. Goodrich Co., pfd | 97 | 100 | 94 | 100 |
| Goodyear Tire & Rubber Co., com | 132 | 136 | 136 | 139 |
| Goodyear Tire & Rubber Co., pfd | 97 | 100 | 99 | 100 |
| Grant Motor Car Corp | 2 | 3 | 2 | 3 |
| Hupp Motor Car Corp., com | 2¾ | 3 | 3 | 3¼ |
| Hupp Motor Car Corp., pfd | 75 | 80 | 78 | 83 |
| International Motor Co., com | 14 | 17 | 16 | 19 |
| International Motor Co., 1st pfd | 40 | 45 | 40 | 45 |
| International Motor Co., 2nd pfd | 11 | 17 | 16 | 20 |
| Kelly-Springfield Tire Co., com | 46 | 47 | 46 | 47 |
| Kelly-Springfield Tire Co., 1st pfd | 75 | 80½ | 77 | 85 |
| Lee Rubber & Tire Corp | 14 | 15 | 15 | 16 |
| Maxwell Motor Co., Inc., com | 28 | 29 | 28 | 29 |
| Maxwell Motor Co., 1st pfd | 60 | 61 | 60 | 63 |
| Maxwell Motor Co., Inc., 2nd pfd | 22 | 23 | 22 | 24 |
| Miller Rubber Co., com | 129 | 134 | 133 | 137 |
| Miller Rubber Co., pfd | 95 | 96 | 95 | 98 |
| Packard Motor Car Co., com | 85 | 90 | 93 | 98 |
| Packard Motor Car Co., pfd | 91 | 94 | 92 | 95 |
| Paige-Detroit Motor Car Co | 16 | 18 | 19 | 21 |
| Peerless Truck Car Corp | 16 | 17 | 17 | 18½ |
| Portage Rubber Co., com | 108 | 112 | 111 | 113 |
| Regal Motor Car Co., pfd | .. | 23 | .. | .. |
| Reo Motor Car Co | 16 | 18 | 17 | 19 |
| Saxon Motor Car Corp | 9½ | 11 | 9½ | 10½ |
| Standard Motor Construction Co | 9 | 11 | 12 | 13 |
| Standards Parts Co | 72 | 80 | 65½ | 69½ |
| Stewart Corp., com | .. | .. | 54½ | 56½ |
| Studebaker Corp, com | 53 | 54 | 47½ | 48½ |
| Studebaker Corp., pfd | 91½ | 97 | 93 | 96 |
| Stewart Warner Speed. Corp | 51 | 52 | 54½ | 56½ |
| Swinehart Tire & Rubber Co | 35 | 40 | .. | 35 |
| United Motors Corp | 25 | 25½ | 25½ | 25½ |
| U. S. Rubber Co., com | 57 | 58 | 46½ | 58½ |
| U. S. Rubber Co., pfd | 98 | 101 | 98 | 103 |
| White Motor Co | 41 | 42 | 42½ | 43½ |
| Willys-Overland Co., com | 18¼ | 19 | 18 | 19 |
| Willys-Overland Co., pfd | 78 | 79½ | 80 | 82 |

## *General Market Prices*

| | Feb. 18 | March 15 |
|---|---|---|
| Iron, foundry, 1 X ton | 34.00 | 34.00 |
| Iron, foundry, 2 X ton | 33.50 | 33.50 |
| Iron, Bessemer, ton | 36.30 | 36.30 |
| Steel, Bessemer, ton | 47.50 | 47.00 |
| Copper, 100 lbs., electric | 23½ | 23½ |
| Lead, 100 lbs | 7 | 7¼ |
| Tin, 100 lbs | .... | .... |
| Petroleum, Kan., cr., bbl | 2.00 | 2.00 |
| Petroleum, Pa., cr., bbl | 4.00 | 4.00 |
| Linseed oil, raw | 1.30 | 1.50 |
| Lard oil, prime | 2.25 | 2.25 |
| Fish oil, Menhaden, br | 97 | 97 |
| Sulphuric acid, 60 | .... | .... |
| Cottonseed oil, bbl | 20.75 | 20.00 |
| Silk, raw, Italy | .... | .... |
| Silk, raw, Japan | 6.10 | 6.25 |
| Rubber, fine up-river, Para | 57 | 57½ |
| Tire, scrap | 4¾ | 4⅜ |
| Steel, open hearth, ton | 44.50 | 44.50 |

## DOMESTIC CRUDE OIL PRICES.

The prices of crude petroleum at the wells during the middle of the month of March, were:

| | | | |
|---|---|---|---|
| Pennsylvania dark | $4.00 | Caddo, La., 38° | $2.00 |
| Mercer black | 2.23 | Caddo, La., heavy | 1.00 |
| Cabell | 2.77 | Healdton | 1.20 |
| New Castle | 2.10 | Moran | 2.00 |
| Corning | 2.85 | Strawn | 2.00 |
| Wooster | 2.48 | De Soto | 1.90 |
| North Lima | 2.18 | Thrall | 2.00 |
| South Lima | 2.18 | Crichton | 1.50 |
| Indiana | 2.08 | Canada | 2.45 |
| Princeton | 2.22 | Humble | 1.35 |
| Somerset 32° | 2.60 | Cal., 37 grav | 1.32 |
| Ragland | 1.25 | Goose Creek | 1.35 |
| Illinois above 30° | 2.22 | Jennings | 1.35 |
| Kan. & Okla | 2.00 | Markham | 1.35 |
| Plymouth | 2.13 | Sour Lake | 1.35 |
| Corsicana light | 1.90 | Vinton | 1.35 |
| Corsicana heavy | 1.05 | Grass Creek | 1.70 |
| Electra | 2.00 | Elk Basin | 1.70 |
| Henrietta | 2.00 | Big Muddy | 1.30 |

### Naphtha.

| | 10-gal. drums | |
|---|---|---|
| | Under 100 cases | 100 cases and over |
| Benzine, 59-62° | 45½ | 45 |
| Stove | 45¾ | 45¼ |
| Auto, 68-72° | 51¼ | 50¾ |
| Naphtha, 73-76° | 55¼ | 54¾ |

| | In cans and cases | | |
|---|---|---|---|
| | Under 100 | 100-199 | 200-299 |
| Benzine, 59-62° | 33.15 | 33.15 | 32.20 |
| 73 a 76° | 43.15 | 42.90 | 42.65 |
| Stove | 33.65 | 33.40 | 33.15 |
| Auto, 68-72° | 39.15 | 38.90 | 42.65 |

## NEW YORK CITY PRICES.

New York City prices for petroleum and its products were:

### Petroleum.

| | | | |
|---|---|---|---|
| Crude, barrels, a gallon | 16 | Fuel, 31° | 12 |
| Refined, barrels | 13 | Fuel, 34° | 13½ |
| **Tank wagons delivery** | 11 | | |

### Naphtha.

| | | | |
|---|---|---|---|
| Garages | 24 | V. M. & P. deod., in steel | 26 |
| Consumers | 26 | V. M. & P. deod., in wood | 28 |

### Gasoline.

| | | | |
|---|---|---|---|
| Gas machine, steel | 41 | 68-72° steel | 32 |
| 72-76° | 33 | 68-72° wood | 28 |
| 72-76° wood | 39 | | |

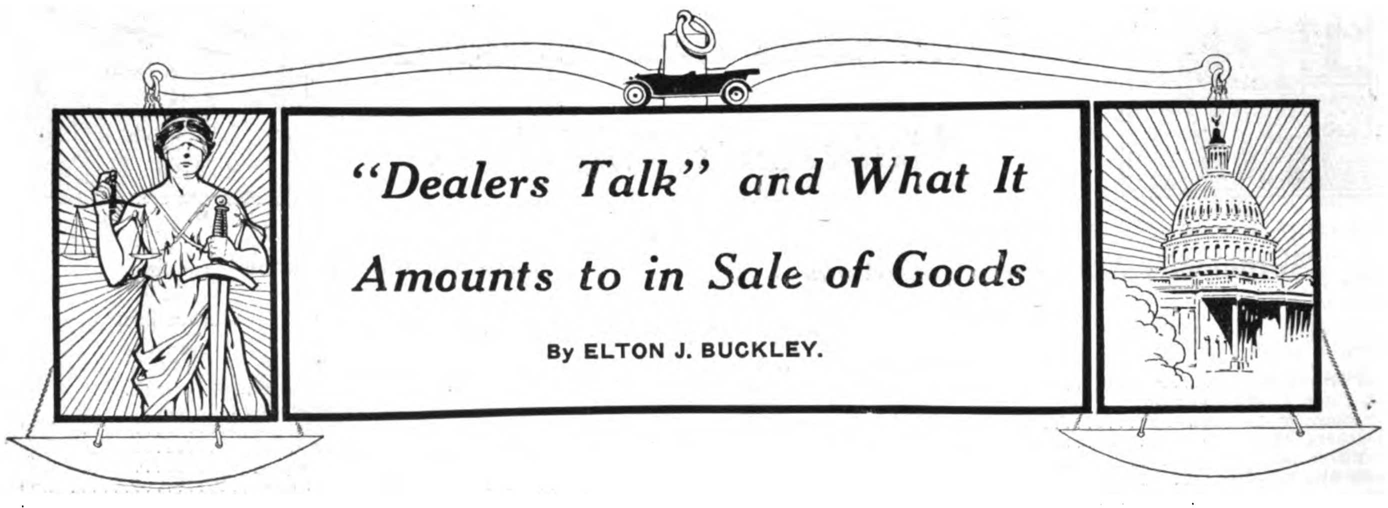
## *Foreign Trade Opportunities*

(Address Bureau of Foreign and Domestic Commerce, Washington, D. C., giving number, which will forward correspondence, unless otherwise stated).

26,571—A man in Australia desires to purchase or secure an agency for the sale of new toys and novelties, first class toilet articles, low priced cycle cars, hardware novelties, up-to-date advertising novelties, hosiery, handkerchiefs, underwear for women, jewelry, paper, low priced pianos and other musical instruments of good quality, sewing machines, essential oils, perfumes, fountain pens and stylographic novelties. Quotations may be made f. o. b. American port. Correspondence may be in English. Bank draft deposit will accompany each order.

26,612—A wholesale firm in France is in the market for steel drills, taps, dies, emery wheels, grinding wheels, broaches, saw blades for metallurgy, and all tools for metallurgic workshops. Quotations should be made f. o. b. New York. Payment will be made in New York. Correspondence may be in English. Reference. Catalogues should be submitted.

26,615—A man in France desires to represent American manufacturers and exporters of small tools, steels, agricultural implements, leather belts, machine tools, hardware, etc. Quotations shoull be made f. o. b. New York. Payment will be made upon delivery of goods. Correspondence should be in French. References.



# *"Dealers Talk" and What It Amounts to in Sale of Goods*

By ELTON J. BUCKLEY.

**If you are in need of legal advice, if you want first-class professional service at no cost to yourself, address a letter to Mr. Buckley, in care of the Legal Department of the Accessory and Garage Journal, detailing the issues as clearly as possible. By special arrangement with this journal he will give immediate answer, either on this page for the benefit of other subscribers who may have the same trouble, or direct by mail as the inquirer specifies. Sign full name for the purpose of correspondence, not for publication. This service is free to subscribers to this magazine.**

I was consulted recently in a way which had never fallen to my lot before. I regard it as a most unique experience. The sales manager of a wholesale concern who not only put selling talks in the mouths of his men, but also does considerable selling himself, came to me and laid before me a problem which was substantially this: "I am an exuberant salesman. It is my way to enthuse over my goods, and when I am enthused I am apt to say more about my goods than I intend to. Only last week a customer pinned the house down to something I had said, which he contended amounted to a guarantee and which I had no right to give at all. I had to admit that I had said about that thing, and the house allowed his claim. I have been told that a man is allowed to brag up his goods to a certain extent and isn't held strictly down to every word, now I want to know how far I can safely go in my selling talks. Is there any rule which I can use and have my men use, so that what I say will be only ordinary selling talk and can't be regarded as a guarantee?"

I gave him the best advice I could on the subject and the incident is responsible for this article on "Dealers' talk: What it amounts to in the sale of goods."

The inevitable conclusion after reading and digesting the law on this subject—there are innumerable cases—is that there is no rule which a business man can lay down for himself and apply with certainty, but there are certain useful principles which he can keep in mind, and these should check him from going too far in his representation about his merchandise. Of course this applies to representations made in every way they can be made—by word of mouth, through advertising, in letters and in every other fashion.

The importance of the thing is this: If the seller in what he says about a thing he is selling, stays within the realm of "dealer's talk," he is not liable even if some of his statements are not borne out. But if he passes beyond "dealer's talk," his statements are warranties, and he will be strictly held to every one.

The cases make very little effort to define "dealer's talk." I give a working definition of my own: "Dealer's talk is something less than a warranty, and consists of an expression of opinion or judgment about the article, on a point as to which the seller has no special knowledge, and on which the buyer can be expected to have just as good an opinion and to use his own judgment."

For instance, take a dealer selling automobile tires. He is not an expert. He says of a tire he is selling: "That's as good as any tire on the market." The buyer takes the tire, which isn't satisfactory. The statement "that's as good as any tire," would be considered in my judgment, mere dealer's talk.

Note my statement in the above illustration that the dealer was not a tire expert. It would make a decided difference if he were an expert, for many cases hold that a statement made by a non-expert, which would be considered no more than dealer's talk, would be considered a warranty when made by a dealer having expert knowledge of the article he was selling.

From a couple of leading cases I assemble the following statement of the law governing the subject:

> Mere commendation, praise or brag by a dealer, is not a warranty. Each seller has the right to extol the quality of his wares, and much latitude has generally been allowed, the language being regarded more as an invitation to purchase than as a warranty.
>
> It is to be conclusively presumed that the buyer knew or ought to know enough not to rely upon dealer's talk or the praise of their goods ordinarily indulged in by sellers.

This last paragraph is rather a sad commentary upon the integrity of the average commercial transaction, but such is the well settled law.

There have been a great many cases in which these principles have been applied. Of course in practically all of them the issue was between a buyer who sought to enforce against his seller a statement (subsequently found to be untrue) which he claimed was a warranty, the seller taking the position that it was not a warranty, but only dealer's talk.

I mention a few of these cases here:

A statement "these are the best goods made," is not a warranty, but merely dealer's talk.

"I think he is sound," spoken of a horse one is selling, is not a warranty if the seller is not an expert veterinarian.

"You'll find this line will readily sell," is not a warranty which the buyer can claim was violated when the line doesn't readily sell. It is only dealer's talk.

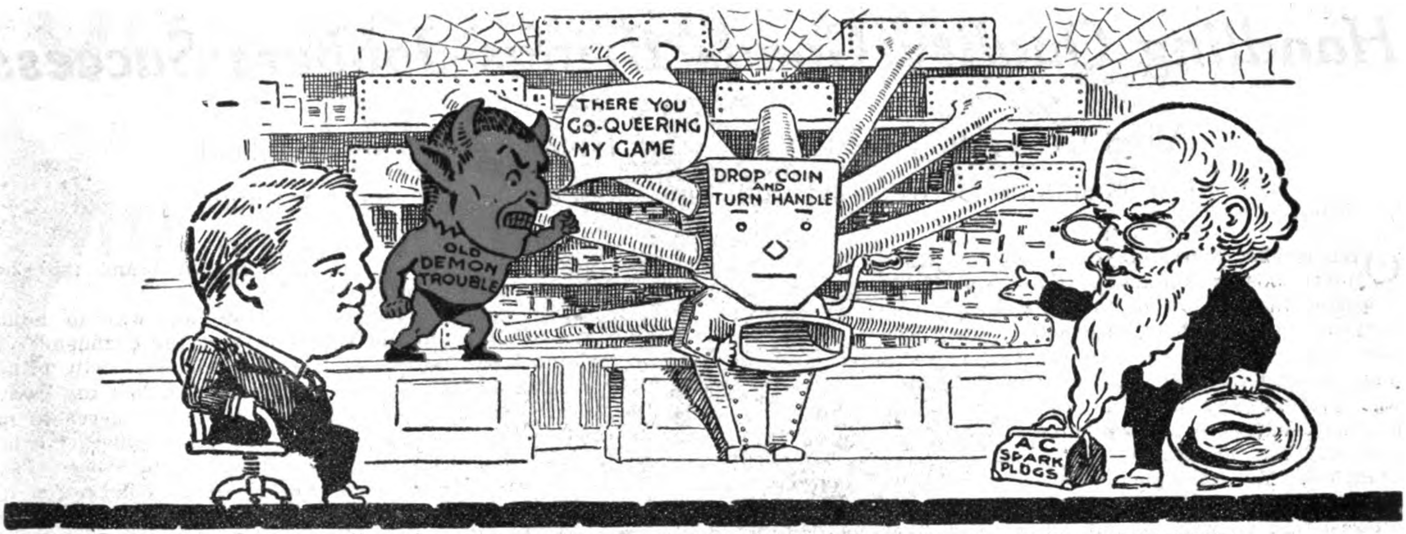
"This is a very good machine and will do your work," is not a warranty when no special work has been mentioned between buyer and seller, or the work the machine was to do was mentioned only in a general way.

But when a buyer orders a machine for a specific purpose and says so and the seller tells him: "You may rely on having a first rate machine which will do the work in a satisfactory manner," that is a warranty, and if the machine doesn't do this particular work in a satisfactory manner the buyer can sue.

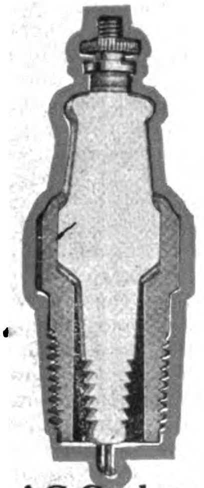
Putting the expression "approved standard quality" on a label, or so representing the goods in other ways is not a warranty.

The rule is different where a man is passing a check or a promissory note, and says "this is good." Value is the only quality negotiable paper has and if it hasn't that it hasn't anything. Therefore every such expression is considered a warranty. Opinions of value as to other merchandise are usually dealer's talk.

(Copyright, February, 1918, by Elton J. Buckley.)

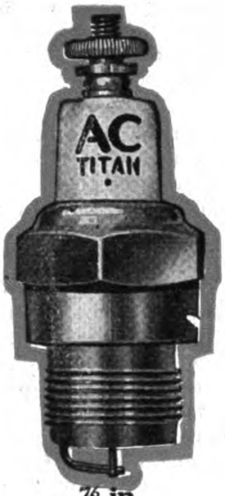

THERE YOU GO-QUEERING MY GAME
OLD DEMON TROUBLE
DROP COIN AND TURN HANDLE
AC SPARK PLUGS

**OLD MAN WISE**—"DON'T MAKE A SLOT MACHINE OF YOURSELF—GET ACQUAINTED THROUGH RELIABLE GOODS THAT WILL ALWAYS BACK UP YOUR TALK—FOLKS COME FROM FARTHER AND BUY MORE THROUGH THE CONFIDENCE THUS ESTABLISHED."



**AC Carbon Proof**
For Fords
Overlands and
Studebakers

IF you want to "queer the game" of Old Demon Trouble, use AC Spark Plugs. They are standard equipment on all these leading cars—*not* because of "claims" but because of *conduct*: actual *performance* on all roads, whether for racing speed or steady grind. There's no reason why *your* car should not have the benefit of



**7/8 in.**
**Regular**
**for**
**Maxwells**
**AC**
**Titan**

# AC Spark Plugs

*The Standard Spark Plug of America*

**CHAMPION IGNITION COMPANY**
**SOLE MANUFACTURERS, FLINT, MICHIGAN**

## These Manufacturers Use AC As Standard Equipment

- Cadillac
- Pierce-Arrow
- Packard
- Marmon
- Hudson
- Chalmers
- Hupp
- Chandler
- Haynes
- Chevrolet
- Dort
- Cole
- Reo
- Paige
- Peerless
- Pilot
- Buick
- Oakland
- Oldsmobile
- Nash
- Kissel Kar
- Premier
- White
- Delco-Light
- Murray
- J. I. Case
- Jordan
- Liberty
- McFarlan
- Paterson
- Lexington-Howard
- Scripps-Booth
- Crane-Simplex
- Stearns-Knight
- Saxon
- Stutz
- National
- Stephens
- Jackson
- Apperson
- Anderson
- Locomobile
- Daniels
- Westcott
- Singer
- Dorris
- McLaughlin (Canada)
- American-La France
- Davis
- Sanford
- Hatfield
- Maytag
- Duesenberg Motors
- Dodge Brothers
- Old Reliable Trucks
- Titan Truck
- Ford Tractors
- Acme Trucks
- Netco Trucks
- Gemco Light
- Gabriel Trucks
- Gramm-Bernstein Trucks
- Moreland Trucks
- Wilcox Trux
- Sterling Trucks
- Republic Trucks
- Diamond T Trucks
- F-W-D Trucks
- G. M. C. Trucks
- Sandow Trucks
- Signal Trucks
- Brockway Trucks
- Samson Tractor
- Menominee Trucks
- Federal Trucks
- Riker Trucks
- Stewart Trucks
- Wisconsin Motors
- La Crosse Tractor
- Advance-Rumely Tractor
- Buffalo Motors
- Continental Motors
- Deere Tractors
- Northway Motors
- Rutenber Motors
- Sterling Motors
- Smith Motor Wheel
- Van Blerck Motors
- Wallis Tractors
- Waukesha Motors

# *Handling Quality Goods Brings Jobbers Success*

## Albert Champion Talked to Accessory Distributors of New England On Relations Between Manufacturer, Jobber, Dealer and Customer

ONE of the interesting events during the Boston Automobile Show was a get-together dinner of the New England Accessory Jobbers, attended by Albert Champion, president of the Champion Ignition Co. Mr. Le Roy Pelletier was present and gave a talk on the healthy condition of the automobile business and the big possibilities in all its branches. Mr. Champion followed with a talk which was received with so much interest that we want to quote it in part for the benefit of the jobbers who were not present.

"My main object," Mr. Champion said, "in asking you to join me here is that you might become better acquainted with each other, as a better understanding will result in better business relations.

"I attended a luncheon yesterday at which Mr. Alfred Reeves spoke to 500 dealers, urging them to join the New England Dealers' Association in order to bring them into closer relationship with each other. He outlined all the benefits to be derived from cooperation and cited this instance for comparison: The National Automobile Chamber of Commerce of which he is manager, owns over 600 automobile patents, and any manufacturer who has been in business for a minimum of a year, operating in a successful and legitimate manner, can join the Chamber of Commerce and get the benefit of all those patents. This has been a very great factor in making the automobile business successful. Just consider for a minute the condition of the industry if each manufacturer owned a few patents and were continually fighting each other. Fortunes would be spent in litigation and the industry could never have grown, as capital would have been scared away. No one can deny the success of the automobile industry and this condition applies to you as well as it does to the automobile manufacturers.

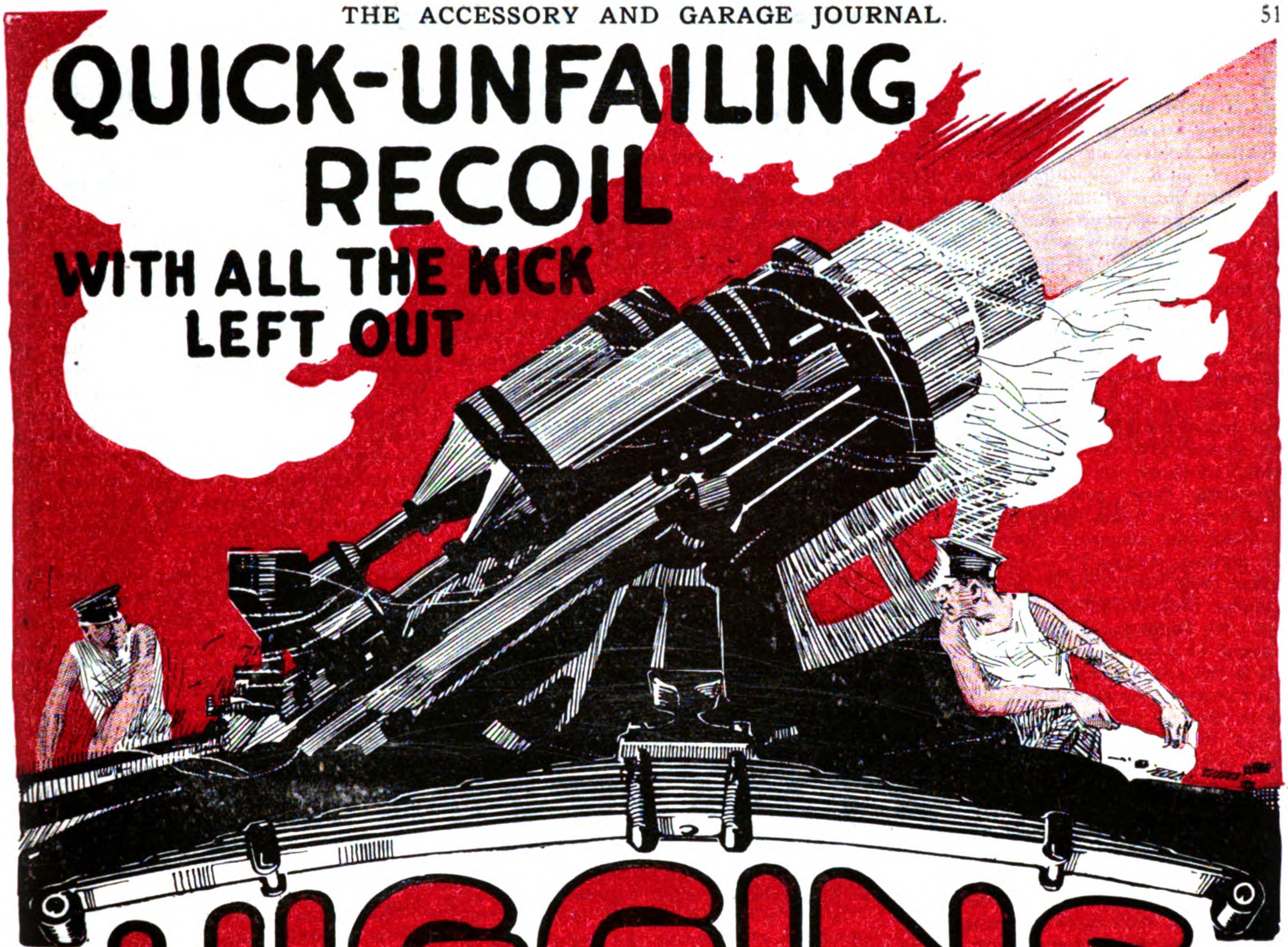
"I am glad to state that I have found a marked improvement in the attitude of most jobbers towards their competitors. A few years ago, when calling on jobbers, I would hear so many grievances and so much 'knocking' that I wondered at times why these firms stayed in such a business themselves. Getting together is undoubtedly what has helped, as not only you get acquainted, but you can stop many evils that are detrimental to your business. For instance you will find on the jobbers' shelves special brands of goods and lines on which there is no demand, but which have the doubtful merit of being cheap, and when it is pointed out to a jobber that it is impossible for him to build a satisfactory business with that class of goods, as even if he does sell them the dealer will be 'stuck,' most of them will answer: 'I know it isn't good; I also know there isn't any demand, but our competitor has a cheap line, is handling a special brand and we must have something to meet that competition.' That kind of competition isn't doing the jobbers any good. It simply results in raising their cost of doing business due to the small percentage of profit they make. The goods must be sold cheap and in many instances gotten rid of below cost. While this hard work is being done to salvage as much as possible from the original investment, the quality lines are being overlooked, as all attention is given to these cheap lines. The management tells the salesmen once or twice a year 'clean up that old stuff.' They are what you know as job lots, an accumulation of all kinds of goods for which there is no demand and they have to be sold in this manner. If more care had been taken in selecting the lines there would not be any job lots. The salesmen are furnished with a list of these job lots and told to unload them on the dealers. If these goods are no good to the jobbers they surely will be of no use to anyone else. What are the dealers going to do with them once they get onto their shelves? Do not forget that your success depends on the success of the dealers. The successful automobile dealers today are the ones that handle good automobiles, and the successful accessory dealers are the ones who handle good accessories. If you are going to build up your business on the right kind of basis you will have to think of the dealers. If you are going to give him advice or suggestions regarding the lines he should handle don't hand him a job lot article or an unknown brand that he cannot sell.

**Albert Champion, President Champion Ignition Co., Flint, Mich.**

"The only satisfactory way to build up business is to earn the confidence of your customers. Confidence will bring dealers to trade with you just the same as you personally go to the merchant in whom you have confidence, whether it be a grocer, shoe store or your tailor. The success of the accessory business is in your own hands, but you can only make it successful by handling quality goods. The lines should be selected carefully and you should investigate the methods of the manufacturer you are dealing with. In other words, you, too, must have confidence in the manufacturer whose product you are going to handle and be absolutely satisfied that he is the one with the best article in that particular line, as well as satisfy yourself that his business methods are in keeping with the character of the goods. You should check his advertising for the reason that anyone trying to 'put something over' through advertising claims cannot be trusted as he is trying to fool you and your customers. Just consider what it means when you and your selling force positively know that the line of goods you handle and recommend comes from a firm in which you have full confidence. It gives you and your men power to sell these goods; it gives confidence to your dealers when they realize the care you take in your selections and you are helping to make the dealers successful because the goods are going to give satisfaction to the owners. The success of your jobbing business depends upon this and deserves your highest consideration.

"In handling quality goods you are going to find it much easier to give service to your dealers. In the past you have handled so many different lines and your money was tied up in so many brands that a good many of you could not keep a sufficient stock of any particular line that was moving fast. By reducing the assortment you will be helped financially because you will have goods that move a quick turnover of your money and you will be able to carry a good sized stock of the fast selling lines, thus being in a position to give good service to your dealers. By service I do not just mean the satisfaction you give to your dealers but also the speed with which you can fill their orders. Think of the number of times you have been short of some standard article and the dealer has been obliged to buy somewhere else, meaning the loss of money, the profit you would have made going to some one else and possibly your customer starting in to deal with another concern. Service to the owner is also implied. Each one of us has had the experience of going

(Continued on Page 52.)



# HIGGINS

## QUALITY SPRINGS
FOR REPLACEMENT

You *feel* Higgins superiority. There's spring all right—and of the *right* kind—a smooth, easy, even sway. *With* that feeling of comfort there is *also* a feeling of *safety*. Lively action tells you there's long life there. Tells you too that springs so smooth in operation *must* be superior in construction. They *are*. Nibbed together at center—that's *one* superiority.

No center hole—center bolt—center hump or center breakage. Then there's superiority in *workmanship*. Superiority in *material*. The best grade of motor car spring steel of a special analysis—properly heat treated. Leaves oiled before assembled—no squeaks. Tested for elasticity, tensile strength and anti-fatigue properties before shipping. Guaranteed alike at *all* points.

Ask your dealer for them. You'll never ask for or *want* anything better.

*DEALERS*—We have a catalog listing more than 500 different styles —and a proposition that is unusually profitable. *Send* for them.

**HIGGINS SPRING & AXLE COMPANY**
**RACINE, WISCONSIN**
**Dept. 329**

**NO HOLE-NO BOLT-NO HUMP-NO JOLT**

(Continued from Page 50.)

into a store to buy one certain article and being attracted by a good display of neckties, hosiery or anything you may think of, with the result that we didn't leave that store without making an additional purchase. The same condition applies to the dealer's well kept stock of saleable supplies—his customers will buy the goods they can see and get right on the spot. On the other hand, if the owner is kept waiting when he wants something, he can't be blamed for patronizing catalogue houses.

"I wish to touch on the subject of your sales organization. It is an excellent idea to give the salesmen an opportunity to check up their own work by furnishing them periodical reports of what they are doing. How are we going to bring the accessory salesmen up to the highest standard? Undoubtedly by paying them according to the amount of business they do and in relation to its cost. No doubt many of you are paying a bonus to your salesmen and I believe this is the proper way. It is my opinion that the salesmen should be paid according to the cost of doing business on the orders they take direct in their territory. After a percentage is set, a bonus can be established with relation to cost reduction which will enable them to earn large bonuses and at the same time effect a big saving for you. I believe that the management and salesmen should have meetings and "get-together" frequently as in such meetings experiences can be compared, customers can be discussed, the salesmen can express their opinions and relate what they may be 'up against' in their particular section. In these meetings the management has the opportunity to inspire the men with confidence by helping them and letting them help each other; by not merely telling them 'go out and sell this,' but by asking their opinions and letting them realize that they are an important part of the business, as no jobbing firm is better than its selling organization and confidence is what makes success possible.

"Another important matter is to read the trade papers. Keep posted on what the automobile industry is doing; read the articles that are written by merchants expert in the handling of accessories; take out subscriptions so that each one of your men will receive a trade paper at home. Possibly they do not think of buying trade papers or just buy one once in a while. Every salesman is trying to better himself and they will find automobile trade papers a great help.

"With the right kind of goods, well organized selling forces and good service you will undoubtedly increase your volume of business and increase the business of your dealers. This increase means lower cost and reduction of cost means higher profit. Volume is what makes big profit and the best illustration I can think of is the Ford Motor company. A short time ago, on account of taking on war work and reducing their output to about 50 per cent., they had to increase their selling price $93 per car, which means an increase of 24 per cent., just think of it. The same condition applies to your business. If you can make your volume great enough you will be on the same basis as Ford, who only had a very small overhead per car. Consider that today their increased overhead must be at least $80 per car. Of course we realize that you must have the right percentage of profit to start with, but there is only one way to increase that profit and that is by reducing your cost through volume.

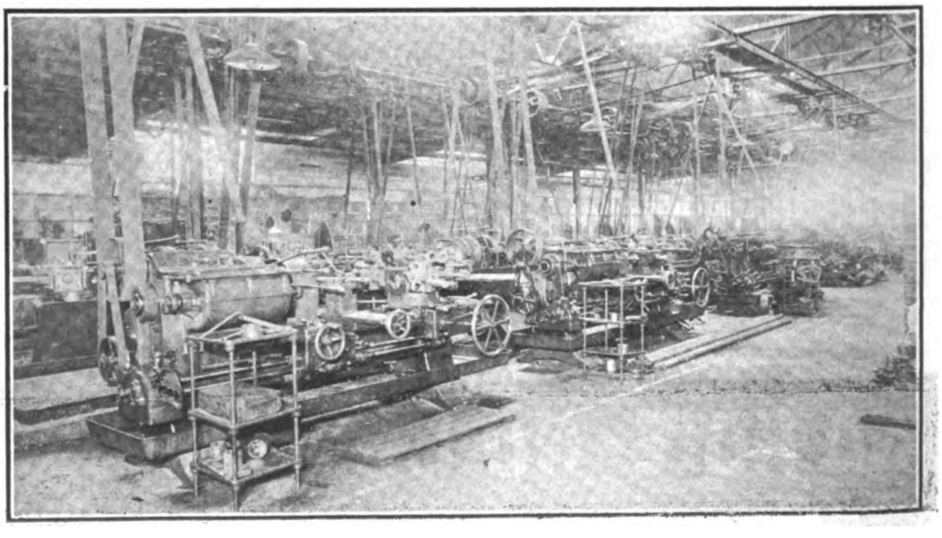
"What are we offering to the jobbers with the AC spark plug? Positively the best spark plug in the whole world today. The reason I can state that is because we know that on comparative tests with foreign makes of plugs an aviation motors we stood up better than any other make of plug in the whole world. It doesn't make any difference what the AC plugs has been put up to do it has done it—airplanes, tractors, automobile motors of all types. We not only made good on aviation, but we are really the only people today who have made good on tractors using kerosene as fuel. The new AC carbon proof plug was made for Henry Ford and Son and is used today on their tractors. The AC line consists of our regular AC, AC Cico, AC Titan and AC Carbon Proof. If you take advantage of the full AC line you can show the dealers that put in a complete stock they are in a position to take care of all customers and all types of motors. The question of carrying the right stock is just as important for the dealer as it is for you, as in getting them to carry a complete stock of the best lines you are making it possible for them to take care of their customers. You are giving them goods that move and make money. You are making them a good credit risk because you are helping them to become successful accessory dealers. The dealers need your advice and those who are willing to accept it do so because they have confidence in you. If they have confidence in you you should justify it by giving them the right kind of advice and keeping that confidence."

## RUSSELL MOTOR AXLE CO. INCREASES PRODUCTION.

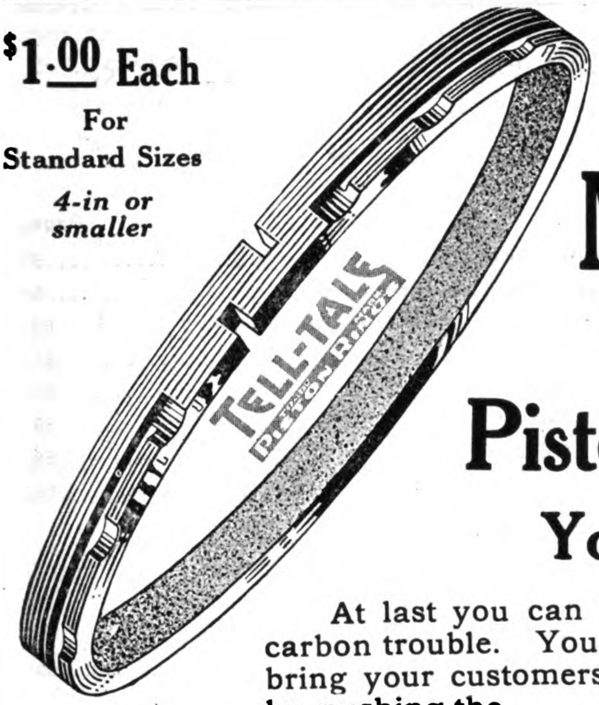
One of the best known concerns of the automotive industry is the Russel Motor Axle Co., North Detroit, Mich., which was established in 1909, and incorporated Dec. 9, 1909. As the name implies the company was originally founded to manufacture rear axles and jackshafts for pleasure cars, and with keen realization of the possibilities of the use of power vehicles for freightage a series of axles for truck construction were produced. Careful engineering research convinced the officials of the company that the types of axles first built could be materially improved and various experiments were carried on to determine what would be the most practical to develop and manufacture.

The internal gear driven axle was regarded as that on which the company should concentrate, and a design was adopted that has been consistently produced in various sizes. A great deal of endeavor was devoted to promotion and when a demand was established this increased very rapidly. Today the company is one of the largest in America producing internal gear axles, and these are used by some of the best known truck builders, for Russel axles are recognized as standard construction units, both reference to efficient and quality.

The company now owns a site of 5¾ acres on which are four factory buildings having 75,000 square feet of floor space. These are equipped with every facility for labor and time economy and for producing accurate work. The methods and processes have been developed through years of experience and the Russel axles are maintained to be exceptionally high grade. The company now employs 375 workers and the value of its finished production is approximately $2,000.000. The company recently completed an addition to its plant having 30,000 square feet of manufacturing space, which increased the capacity about 40 per cent.



Machine Department of the Russel Motor Axle Co.'s Factory, North Detroit, Showing Part of a Big Battery of Lathes.



**$1.00 Each**
**For**
**Standard Sizes**
***4-in or smaller***

# Look Here,
# Mr. Repair Man!
## This is the Greatest
## Piston Ring Proposition
## You Have Ever Known

At last you can boost a piston ring that really overcomes carbon trouble. You can make good on every installation and bring your customers back again to "The Man Who Knows" by pushing the

**TELL-TALE**
**TRADE MARK.**
**PISTON RINGS**

You charge your customers less than for any other good ring, your own cost is less, yet you make more money on each installation. The Tell-Tale will help you get the bulk of the piston ring business.

This wonderful ring is individually cast in one piece and specially heat-treated. The scale of the casting is retained. It will outlast any other ring, regardless of price.

The Tell-Tale Piston Ring polishes its own wearing surface before the car has run 50 miles. It quickly seats itself in the cylinder walls and makes the pistons really gas-tight—truly leak-proof.

Our basic patents cover the oil channel and vents in the wearing surface which insure uniform distribution of oil, whether the supply is large or small. No oil can reach the combustion chamber.

## A Big Proposition For You

The only man between the Tell-Tale Piston Ring and the car owner is the repair man. The Tell-Tale Piston Ring is sold only through Repair Men. We are advertising you in a way that will help you make more money.

The cost of each Tell-Tale Piston Ring—any standard size or model 4-inches or smaller—is $1.00 each. You can make more money on each set than you now make on rings which cost the car owner $1.25 to $1.50 each.

Furthermore, the Tell-Tale is a far better ring. It will tell its own story of super-goodness in such a way that you will get more general repair work as a result of your good judgment in recommending this ring.

We are willing to let you test a set of Tell-Tale Piston Rings at our expense. Mail the coupon for full details of our splendid plan and you will then know why "We leave it to the man who knows."

**VULCAN MACHINE & TOOL CO.**
**915 Olive Street St. Louis, Mo.**

Name
Street
City
Vulcan Mach. & Tool Co.
St. Louis
Please Send
Plan
A. & G. J.

"NORMA"

BALL BEARINGS

(Patented)

Performance must be built into a machine—it is a thing inherent, not alone in the machine as a whole but also in every part, every construction detail. Failure of a so-called minor part or minor detail, impairs machine performance as surely as a break-down of the machine as a whole.

**Failure of ignition or lighting system may result from a failure of a bearing in magneto or lighting generator. To safeguard against which, makers of these electrical accessories of the highest grade — of maximum performance capacity — have standardized on "NORMA" Ball Bearings.**

**Be *Sure*—See That Your**
**Electrical Accessories**
**Are "NORMA" Equipped**

**THE NORMA COMPANY OF AMERICA**
**1790 BROADWAY NEW YORK**

**Ball, Roller, Thrust and Combination Bearings.**

## INDEX TO ADVERTISERS

Page

Adamson Mfg. Co .... 3
Advance Auto Accessories Corp .... 5
American Bureau of Engineering, Inc .... 60
Auglaize Motor Car Co .... 61
Auto Exchange .... 59
Auto Parts Co .... 59
Auto Salvage Co., Inc .... 59
Auto Wrecking Co .... 58

Bacon Service .... 68
Ballman-Whitten Mfg. Co .... 65
Bearings Service Co .... 9
Bilodeau Ball Bearings Works .... 63
Bowser & Co., Inc., S F .... 62
Brown, Walter H .... 59
Brunner Mfg. Co .... 1
Bunting Brass & Bronze Co .... 62

Carborundum Co .... B
Champion Ignition Co .... 49
Chase & Co., L. C .... Cover
Columbus Varnish Co .... 58
Corning Glass Works .... D
Corp Brothers .... 59
Curtis Pneumatic Machinery Co .... 63

Detroit Battery Co .... 56
Detroit Magneto Exchange .... 58
Dixon Crucible Co., Jos .... 68
Dyer Co., G. H .... A
Dyneto Electric Corp .... 2

Egry Register Co .... 57

Faw, Inc., J. H .... 55
Fitzgerald Mfg. Co .... 8

Garford Motor Truck Co .... 62
Greenfield Tap and Die Corp .... 57

Harvey Spring & Forging Co .... 7
Hartzman & Co., H. S .... 59
Higgins Spring & Axle Co .... 51
Hughes & Co., D. C .... 65

Imperial Brass Mfg. Co .... 68
International Lubricants Co .... 64
International Metal Polish Co .... 56
International Motor Products Co .... 61

## INDEX TO ADVERTISERS

(Continued)

Page

J & B Mfg. Co. ... 67
Jefferson Electric Mfg. Co. ... 60
Jenkins Vulcan Spring Co. ... 62

Kennedy Car Liner and Bag Co. ... 68

La Fayette Engineering Co. ... 56
Lawson, F. H., Co. ... 7
Lenthe, D. ... 59

Mabey's Electric and Mfg Co. ... 63
Martin Mfg. Co. ... 60
Mossberg Co., Frank ... Cover
Motor Specialties Co. ... 66
Mueller & Co., R. S. ... 66

New Departure Mfg. Co. ... 68
New Era Spring and Specialty Co. ... 68
New York Coil Co. ... 60
Norma Co. of America ... 54

Piston Ring Co. ... 66
Puritan Machine Co. ... 58

Rosenfield & Co., James ... 59
Ross-Gould List and Letter Co. ... 62

Scaife, Wm. B. & Sons Co. ... 60
Schrader's Son, Inc., A. ... 61
Shaler Co., C. A. ... C
Specialty Manufacturing Co. ... 59
Starrett Co., L. S. ... 10
Stenman Electric Valve Grinder Co., Inc. ... 67
Stockbridge Body Co. ... 64
Sullivan Motor Car Co. ... 63

Tire Outlet Co., Inc. ... 58

United Engine & Mfg. Co. ... 66
United States Air Compressor Co. ... 63
Universal Battery Co. ... 4

Vanderpool Co. ... 65
Versal Products Mfg. Co. ... 62
Vulcan Machine & Tool Co. ... 53

Walden-Worcester, Inc. ... Cover
Weston Electrical Instrument Co. ... 61
Williams Foundry and Machine Co. ... 65
Wisconsin Auto Top Co. ... Cover
Witte Engine Works ... 56

*Fawsco IMPROVED Combination*

Gasoline Gauge

Oil Cock Wrench and Cleaner

STOP CRAWLING UNDERNEATH YOUR CAR

For FORD Cars

GET AT YOUR OIL COCKS WITH EASE

35¢

FAWSCO IMPROVED COMBINATION OIL COCK WRENCH AND GASOLINE GAUGE

THE PIN CLEARS ANY STOPPAGE

*Large easel display card like above with each order*

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Packed 12 in Heavy Carton with DISPLAY STAND FOR ONE—Balance in Envelopes.

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*WE CAN SHIP FROM STOCK*

AMERICAN-STANDARD

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Primary
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Magneto
Duplex Lighting
Braided—Rubber—Armored

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Ignition Wiring Assemblies
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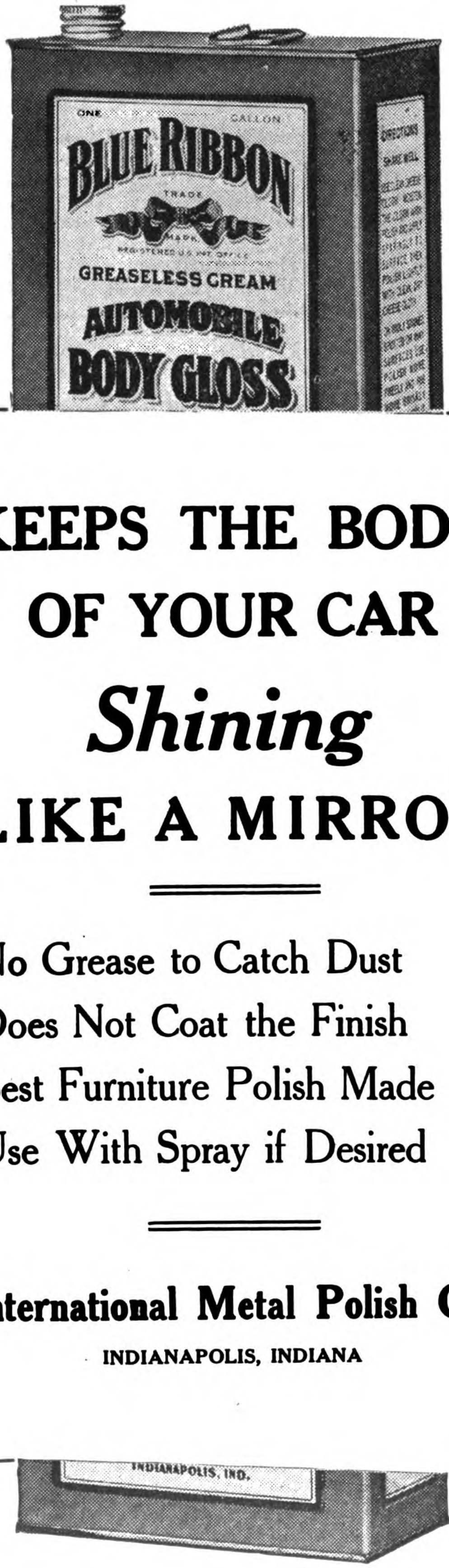
Ideal Hose Clamps
Tungsol Auto Lamp Bulbs
Walden-Worcester Wrenches

Automobile Fuses.

*J. H. FAW, Inc.*

41 Warren St. NEW YORK



## KEEPS THE BODY OF YOUR CAR *Shining* LIKE A MIRROR

No Grease to Catch Dust
Does Not Coat the Finish
Best Furniture Polish Made
Use With Spray if Desired

**International Metal Polish Co.**
INDIANAPOLIS, INDIANA

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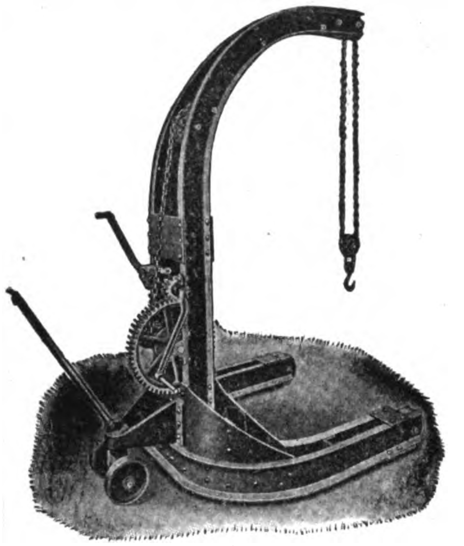

**SAFETY FIRST**

## *The "Lafayette" Portable Steel Crane*

Made of steel—it will not break. Double locked with load. Safe. Low base. Ample power. Roller bearings. No garage or repair shop can afford to be without them. A complete hoisting and conveying machine.

STANDARD SIZES

| No. | Height | Overhang | Capacity | Ht. of Base | Weight | List |
|---|---|---|---|---|---|---|
| 6 | 8'-6" | 3'-6" | 5000 lbs. | 8 inches | 900 lbs. | $100.00 |
| 5 | 7'-6" | 3'-0" | 4000 lbs. | 7 inches | 700 lbs. | $85.00 |
| 4 | 6'-6" | 2'-6" | 3000 lbs. | 6 inches | 500 lbs. | $70.00 |

*For Sale by Jobbers Everywhere or Write*

**The LaFayette Engineering Co., Mfgr's, LaFayette, Indiana**

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## DETROIT BATTERIES

For every make and model of motor car carrying an electric starting system. Replacements on cars no longer manufactured can be had promptly.

**Detroit Battery Co.**
Detroit, U. S. A.

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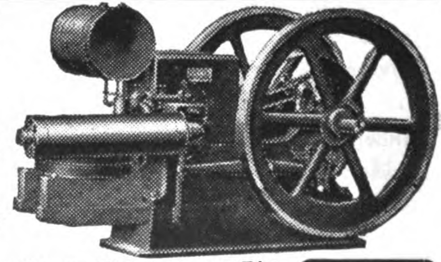
## WITTE "Kero-Oil" Engines



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**From Factory**

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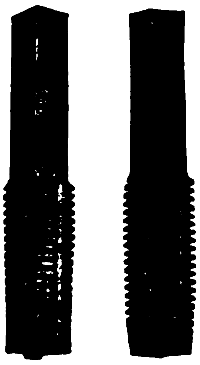
**I Save You $15 to $200**

NO. 310 LITTLE GIANT

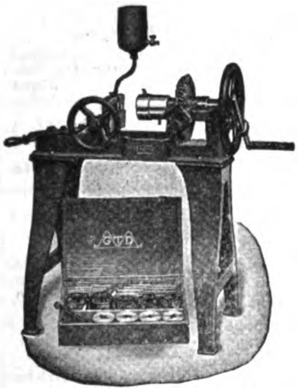
Little Giant Screw Plate

# The Complete Line of Threading Tools

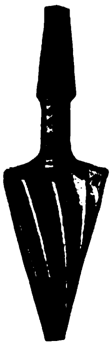


Hand Taps

Little Giant Die



G. T. D. Threading Machine



G. T. D. Burring Reamer

Whatever your requirements in the screw cutting line may be, we can meet them, as our line is the most complete in the world. Bear in mind that our service in the threading tool line is unexcelled.

Ask for a copy of our No. 37 general catalog which contains besides the products listed below many tables of valuable information for garage repair men, etc.

Below is a partial list of products shown in the catalog.

**Taps**—All kinds, for hand and machine use, in all thread standards.

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**Screw Plates**—Many styles and assortments for bolts, nuts and pipe, with Automobile (S.A.E.), U.S.S. or V threads, combination assortments with both U.S.S. and S.A.E. thread taps and dies.

**Pipe Tools,** Wrenches, Vises, Cutters, Stocks and Dies.

**Reamers**—Hand and Machine, bit brace and straight shanks, all types.

Send for a catalog for ready reference.

## Greenfield Tap and Die Corporation

### Greenfield, Mass.

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Chicago, 13 South Clinton St.
Canadian Factory, Wells Brothers Company of Canada, Ltd., Galt, Ont.

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NO REBATES
NO FORGOTTEN CHARGES
NO WASTE
NO DISPUTES
NO CARELESSNESS
NO OVERSIGHT
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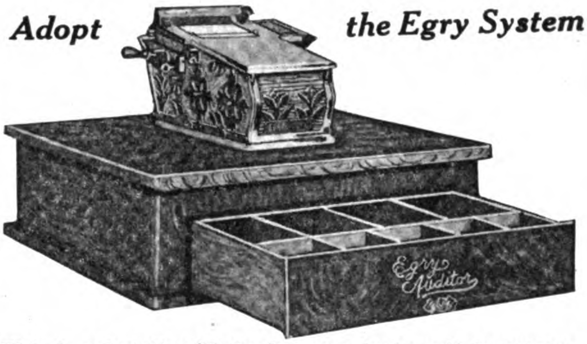
NO
CHARGES PROPERLY ACCOUNTED FOR
MONEY
TURNS WASTED MOMENTS TO DOLLARS

# EGRY GARAGE SYSTEM

is a decided factor in business, lending its pronounced advantages of Protection, Accuracy and Efficiency in the safe conduct of business.

**"Make Your Business Safe For Success."**

*Adopt the Egry System*



**This is what it will do for you, just as it is accomplishing these splendid results for hundreds, yes, thousands, of concerns in yours and similar lines of business.**

A complete record of each day's business; perfect control of all charges; safeguard your cash transactions; avoid unpleasant disputes; make your employees careful; increase trade confidence; cause the customer to automatically become a part of the system; aid in stock accounting; keep you posted on the details of your business by means of a secret record of each transaction; overcome the element of worry and waste; create efficiency.

**Send today for detailed information—you incur no obligation to purchase. Our bulletin fully describing this worthy and meritorious System is yours for the asking. The cost of installation is trifling—the results in service and saving enormous.**

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DAYTON, OHIO, U. S. A.

Let the name "EGRY" be associated with your every thought of "BETTER BUSINESS."

INCREASED PROFITS
AN ACCURATE RECORD OF EACH TRANSACTION
PROFITABLE RETURNS

# HERE YOU SAVE

## 50% to 75%

## ON REPAIR PARTS

**Our immense volume makes this saving possible. Only the best Parts offered backed by our iron clad GUARANTEE of "Complete Satisfaction or Money Cheerfully Refunded." Save this list for future reference. Many excellent BARGAINS.**

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| Partin-Palmer | 50.00 | Case 1911 | 75.00 |
| Maxwell 25 | 60.00 | Stearns 1911 | 75.00 |
| Cadillac 09-10 | 60.00 | Moon 1912 | 75.00 |
| Cadillac 1912 | 75.00 | Velie 40, 1912 | 85.00 |
| Speedwell 40 hp. | 75.00 | Buick 17 | 90.00 |
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| Front Axles | 5.00 | 10.00 |
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| Radiators | 10.00 | 25.00 |
| Springs | 1.50 | 2.50 |
| Spring Leaves | .25 | .50 |
| Bearings, any make | .50 | 5.00 |
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| Remy Mag. & Coil | .... | 10.00 |
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| Bosch D U 4 set spark | .... | 25.00 |
| Bosch D R 4 | .... | 25.00 |
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| Bosch D 6 | .... | 25.00 |
| Bosch D U 6—D R 6 | .... | 35.00 |
| Splitdorf Dixie | .... | 30.00 |
| Mea H. T. Mak | .... | 25.00 |
| Eisemann, H. T | .... | 35.00 |
| Simms H. T | .... | 20.00 |
| Splitdorf Coils | 5.00 | 7.50 |
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| Windshields | 6.00 | 10.00 |
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| Oil Side Lamps for Ford, Pr. | .... | 2.00 |
| Electric Side Lamp, Pair | .... | 3.00 |
| Oil Side Lamps, Pair | .... | 3.00 |
| Spot Lights with Mirror | .... | 3.50 |
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| Round Gas Tank, 12x35, for Vacuum | .... | 6.00 |
| Carter Gravity Tank | .... | 4.00 |
| Stewart Vacuum Tank | .... | 7.50 |
| Tube Vulcanizer | .... | .50 |
| Foot Pumps | 1.50 | 2.50 |
| Spark Plugs | .25 | .50 |
| Reliners 30x3—30x3½ | .... | .75 |
| Reliners 32x3½—32x4 | .... | 1.00 |
| Reliners 33x4 and larger | .... | 1.50 |
| Blow out patches inside | .... | .20 |
| Blow out patches outside | .... | .35 |

***Instant Service!***
***Write, Wire or Phone—***

## AUTO WRECKING CO.

*"We Tear 'Em up and Sell the Pieces"*

**13th and Oak** **Kansas City, Mo.**

# TRADE OUTLET

## DO YOU OWN A FORD

Like to "Doll" it up a little so it will look, ride and behave like a regular car. See what we can do for you.

**MAXWELL BODIES.**

Install one on your Ford.

"Fits like the paper on the wall." Beautiful new streamline bodies, painted and upholstered. Besides Fords and Maxwells these bodies will fit Chevrolet 490, Overlands, Hudson 20, Flanders 20, E. M. F. 30, Dort, R. C. H. and several other light cars.

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| **Touring type** | **$35.00** |
| **Roadster type** | **$30.00** |

(Crating $5 extra.)

Send for the proof.

**ELECTRIFY THE FORD.**

Brand new lighting systems, consisting of generator, battery, electric side and tail lamps, switches, etc.

Regular price, $29. Our price.....**$10**

Order one today.

**SPECIALS FOR FORDS.**

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| Seat covers, all models, complete set | **$3.50** |
| Crown fenders, set | **13.00** |
| Bucket racing seats, pair | **10.00** |
| Do you want more speed—special ratio gears, set | **12.00** |
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| Stewart speedometers | **6.13** |

**PUT ON A BUMPER.**

Regular price, $12. Our price.. **$3.50**

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| Master vibrators, either K. W., New York or Tarco | **4.50** |
| One man mohair tops, all complete | **25.00** |

Everything for the Ford.

Write for a copy of our bargain bulletin.

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**"All parts for all cars."**

**51 Lafayette Blvd.** **Detroit, Mich.**

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| Bosch Du-4 set spark | 25.00 |
| Bosch D4 and Dr4 | 25.00 |
| Bosch D6 and Dr6 | 30.00 |
| Splitdorf 4 cyl. Dixie, high tension | 25.00 |
| Splitdorf 4 cyl., Models A, T, X and D | 10.00 |
| National 4 cyl. low tension | 8.00 |
| Briggs 4 cyl. low tension | 8.00 |
| Remy 4 cyl., type R L | 15.00 |
| Simms SU4 high tension | 22.00 |

**GENERATORS.**

| | |
|---|---|
| Deaco 6 volt | $12.00 |
| Auto Lite 6 volt | 15.00 |

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| | |
|---|---|
| Splitdorf T S type | $10.00 |
| Splitdorf box type | 6.00 |
| Bosch type A | 13.00 |
| Remy box coils | 6.00 |
| Remy type LC and LE | 8.00 |
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**PREST-O-LITE TANKS.**

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| Model B., fully charged | $8.00 |
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**WE REPAIR any make magneto, coil, lighting generator or starter and give 24 hour service. Member Detroit Automobile Trade Association.**

**Detroit Magneto Exchange**

**192 Grand River Ave,** **Detroit, Mich.**

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**Write or Phone.**

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**211 Columbus Ave., Boston, Mass.**
**Phone Back Bay 2821.**

**GARAGE TRADE ATTENTION.**

We Repair All Makes Of
**Starters, Generators, Magnetos.**
Insuring Satisfaction and quick service.

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**Electrical Service Engineers.**
**390 Newbury St., Boston, Mass.**

**PEERLESS BLACK JAPAN.**

Extra Fine.

A rich gloss air drying enamel for touch up and all around use on wood and metal parts of automobiles. One coat covers solid and dries over night.

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**Columbus** **Ohio**

**PEERLESS FENDER JAPAN.**

Jet Black.

Made especially for coating fenders and hoods with a rich black gloss enamel. Air dries and has a finish like a baked job. Dries in twenty-four to thirty-six hours.

*Sold by Garages and Auto Supply Stores.*

**THE COLUMBUS VARNISH CO.**
**Columbus** **Ohio**

**PEERLESS MIRROROID.**

A varnish renewer to be applied to varnished surfaces that have lost their luster and become dull through use. Dries over night with a fine luster that will wear for months.

*Sold by Garages and Auto Supply Stores.*

**THE COLUMBUS VARNISH CO.**
**Columbus** **Ohio**

**PEERLESS GASKET SHELLAC.**

A strictly high grade product cut in pure alcohol for gaskets, cork carburetor floats and such parts of an automobile. A high grade product which makes a tight seal.

*Sold by Garages and Auto Supply Stores.*

**THE COLUMBUS VARNISH CO.**
**Columbus** **Ohio**

**PEERLESS LINING DYE.**

A powerful black dye that dyes all cloth linings a black uniform color over stains and faded parts alike. Dries in two or three hours.

*Sold by Garages and Auto Supply Stores.*

**THE COLUMBUS VARNISH CO.**
**Columbus** **Ohio**

**PEERLESS RIM PAINT.**

Anti-Rust.

A protective coating for automobile rims, to allow tires to be removed with ease and keep rims from rusting. Dries in four to five hours.

*Sold by Garages and Auto Supply Stores.*

**THE COLUMBUS VARNISH CO.**
**Columbus** **Ohio**

# TRADE OUTLET

WE HAVE THE LARGEST STOCK OF

## USED TIRES

IN

## New England

Our Used Tires are better than any other and we can fill any order of any size tire from 1 to 1000 of any size. Would you pay $12.20 for a 30x3 Tire when we can sell it to you for $3? Or would you pay $50 to $60 for a 37x5 Tire when our price is $10.

### Let Us Prove These Facts to You

| Size | Tires | Size | Tires |
|---|---|---|---|
| 28x3 | ..$2.75up | 34x4½ | .$7.50 up |
| 30x3 | .. 3.00 up | 35x4½ | .. 8.00 up |
| 30x3½ | .. 3.75 up | 36x4 | .. 7.75 up |
| 31x4 | .. 5.00 up | 36x4½ | .. 8.00 up |
| 32x3½ | .. 5.00 up | 37x4½ | .. 8.00 up |
| 32x4 | .. 6.50 up | 35x5 | .. 8.50 up |
| 33x4 | .. 6.50 up | 36x5 | .. 9.00 up |
| 34x4 | .. 6.50 up | 37x5 | .. 9.00 up |

We carry at all times firsts and seconds of all well known makes, including, U. S., Fisk, Goodrich, Goodyear, Empire, etc. Special price on 37x5 tires. New Seconds..................$23.00

**Free delivery to all parts of New England if order is followed by check or money order.**

**Boston Auto Tire Exchange**
**304 Columbus Ave., Boston, Mass.**

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We Carry the Largest Stock of

## AUTO PARTS

**IN AMERICA**

We furnish parts at a saving of

## 50 to 80%

Off Manufacturers' Price List.

If you're in a hurry just take your parts book of your car and deduct one-half of the price in there and write, wire or 'phone us the order. We will ship parts the same day your order is received. Special discounts to dealers.

## GEARS

We have just received a shipment containing EIGHT TONS of GEARS for all standard makes of cars. Send us your old gears and let us match them.

**Big Bargains in Motors, Parts, Accessories.**

Every garage and repair man should have our new catalogue.

**THE HOUSE RELIABLE.**

**THE AUTO PARTS CO.**
**4100 Olive St., St. Louis, Mo.**

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**MAXWELL-METZ DEALERS.**

We carry at all times a full and complete stock of **Atwater Kent Parts.** Also complete systems and magneto replacements. We are also manufacturer's agents for the

**Walden-Worcester Wrenches.**
Write for our Price List.

**ATWATER KENT SALES CO. OF N. E.**
**888 Boylston St., Boston, Mass.**

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## CYLINDER REBORING

### OVERSIZE
### Pistons and Rings

Out of city orders given prompt and careful attention.

**CORP BROS.** 40 Mathewson St. Providence, R. I.

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## Radiators—Fenders

Automobile repair work in all its branches. Doing the most satisfactory work. Skilled workmen, good materials, moderate charges. Radiators, Fenders, Hoods, Tanks, Boxes, Pans, Sheet Metal work.

Insure your Radiator from freezing by using

**PEERLESS ANTIFREEZE.**

It prevents loss of use of car and loss of time resulting from laying up of car.

**WALTER H. BROWN**
**18 Cambria St., Boston, Mass.**

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**CYLINDERS RE-BORED**

All sizes. Oversize Pistons, Rings, Etc.
Fords ..........................$15.00
Croft Electric Lighting Outfits for Ford Cars. Agents Wanted.

**THE AUTO EXCHANGE,**
**7 Reservoir Ave., Providence, R. I.**

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Send your name and address with 35 cents in coin or stamps and we will send you sample of the greatest Patriotic Novelty ever produced. Retails 50 cents. (Positively none free.) Everybody wants one. They can't help it. Big discount in quantity lots. Great agents seller. A great premium for any line of business. Quick action on your part means big money for you.

H. S. HARTZMAN & CO.
1125 13th Ave. Moline, Ill.

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**Rebuilt Magnetos**

**High Tension Bosch, $12.50 Up.**

Warranted to give perfect satisfaction or money refunded.

SPECIALTY MANUFACTURING CO.
**637 Mass. Ave., Arlington, Mass.**

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BOSCH MAGNETOS; all models; Eisemann, Splitdorf and Remy Magnetos always on hand. Price list sent. D. Lenthe, Ordway Bldg., Newark, N. J.

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**AUTO SALVAGE CO., INC.**

**The World's Largest New and Used Parts House. St. Louis, 2833-25 Locust St.; Kansas City, 1701 Main St.; Cincinnati, 314 E Third St. Write to nearest office.**

**Parts for any Automobile at a saving of 50% to 80%. Our three great plants cover every state in the Union, and we are therefore in better position to fill your orders.**

**Engines—40 to 50 of them on the floor now and we will make prices on them that will move them. Several unit power plants.**

**Transmissions—Planetary, two-speed, three-speed, four-speed, centre control, with and without multiple disc clutch; all at surprisingly low prices.**

**Rear Axles—From the Timken to the Ford, many with transmission on them, at prices from $10 to $75.**

**Our Guarantee. You Must Be Satisfied. Any article purchased from us which does not in your opinion, give satisfaction or fit, can be returned to us at our expense and your money will be cheerfully refunded.**

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## U
## US
## USED
## TIRES

Our references should command your attention. Any Boston tire agency, Dunn's and Exchange Trust Co.
Mgrs. K. S. Brayton, George Vallely.

| | | | |
|---|---|---|---|
| 30x3 | ...$3.30 | 34x4 | ... $8.00 |
| 30x3½ | ...$4.50 | 34x4½ | ... $9.00 |
| 32x3½ | ...$4.85 | 35x4½ | ... $9.00 |
| 31x4 | ...$6.00 | 36x4½ | ... $9.00 |
| 32x4 | ...$6.00 | 35x5 | ...$12.00 |
| 33x4 | ...$7.00 | 37x5 | ...$10.00 |

NON-SKIDS 10% HIGHER.

**USED TIRE OUTLET CO.**
**191 Cambria St., Boston, Mass.**

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IF IT'S

## Used Auto Parts

WRITE US.

**Gears, Rear and Front Ends and Used Accessories for nearly all makes. Just Try Us. All Mail Orders Filled.**

Write or Phone.

**N. HURWITZ & SON.**
**108 W. Cedar St., Boston, Mass.**

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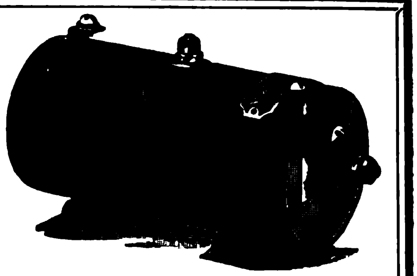
**WANTED—SCRAP IRON**

In any condition and any quantity. Paying the highest market prices. Get our prices before selling. Phone Chelsea, 51460.

**JAMES ROSENFIELD & CO.,**
**Scrap Irons, Steel and Metals.**
**88 Elm St., Chelsea, Mass.**

NEW YORK COIL Co.
NEW YORK, U.S.A.

**Service Stations and Garage Men Everywhere Are Buying Our Spark Coils For Replacement on All Battery Ignition Equipped Cars**



**Unusually efficient and supplied with resistance units and brackets that FIT ALL POPULAR CARS.**

**THEY BRING BUSINESS, save time and make you a NICE PROFIT.**

***Circular shows proper model for each car manufactured***

## NEW YORK COIL COMPANY

**341 Pearl Street . . . . . . . New York, N. Y.**

**Western Distributors: GRAY-HEATH COMPANY, 1440 Michigan Avenue, Chicago, Ill.**

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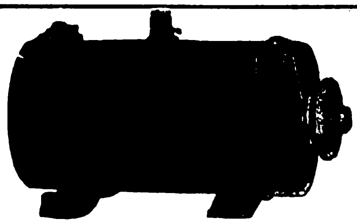

**D-200 COIL**

## JEFFERSON 6 and 12 VOLT BATTERY IGNITION COILS

**although few in number are interchangeable with any style of coil used with Standard Battery Ignition.**

**These coils are particularly noticeable because of their workmanship, flexibility, simple construction and completeness of detail.**

**A coil for every requirement in the ignition field.**

***Write for descriptive matter and attractively low prices***

**JEFFERSON ELECTRIC MFG. CO., 426 So. Green St., Chicago, Ill.**

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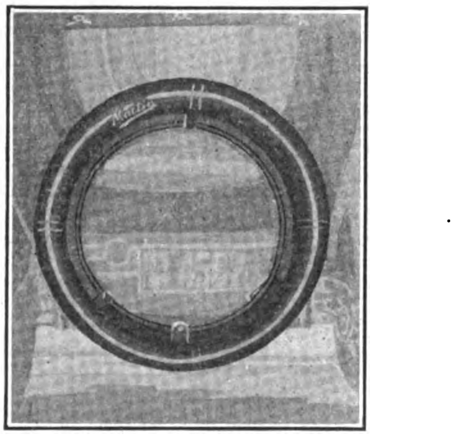
## Martin Tire Covers

The lowest priced, highest quality, fastest selling tire covers made.



**The Martin Style C Cover.**

A "sale on sight" line with all dealers. Will fit any tire whether carried on or off extra rims.
Sold in sizes listed. Made of heavy selected enameled drill, long lasting and attractive in appearance.

| Sizes | List Prices |
|---|---|
| 28-30 | $1.70 |
| 31-32 | 1.80 |
| 33-34 | 2.00 |
| 35-36 | 2.15 |
| 37-38 | 2.20 |
| 39-up | 3.00 |

**Jobbers and Dealers Write for Catalogues and Discounts.** The Martin full line includes specialties that afford big returns to the trade.

**MARTIN MANUFACTURING CO.**
**Lancaster Ohio**

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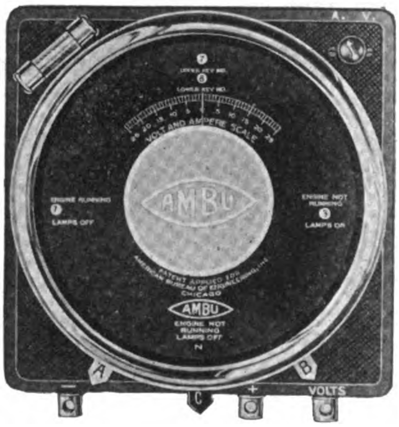

AMBU Electric Trouble Shooter is an instrument which automatically detects and locates accurately and quickly trouble in any American made starting and lighting system used as standard on any American made cars—

**AMBU SERVICE**

shows you *what* the trouble is and exactly *how* to repair it.

**Write for Complete Details.**

**American Bureau of Engineering, Inc.,**
**1032 So. Wabash Ave.**
**CHICAGO - - ILL.**

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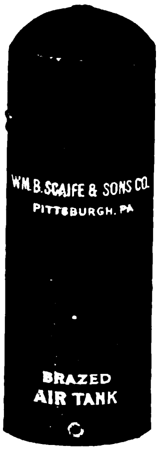


## SCAIFE COPPER-BRAZED AIR TANKS

**are positively guaranteed to hold air indefinitely without loss of pressure.**

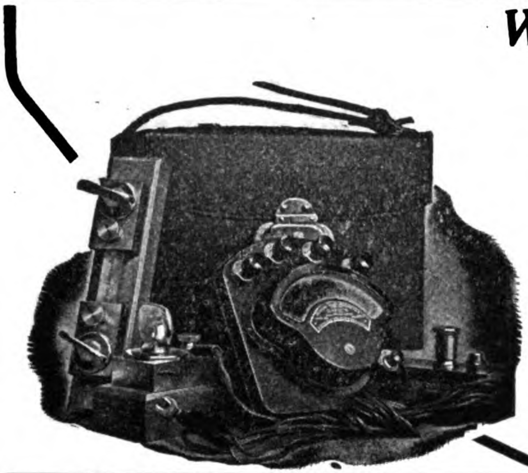
**CAUTION**

Do not confuse Scaife Copper-Brazed Tanks with the cheap Welded or Soft-Soldered Tanks made by others.

**We Also Manufacture**
**SCAIFE GASOLINE STORAGE OUTFITS**

***Send for Catalogues.***

**WM. B. SCAIFE & SONS CO.,**
**First National Bank Bldg. PITTSBURGH, PA.**



*Will Somebody Else Get Your Share?*

If you can repair and adjust Electrical Equipment, you will get the cream of the garage business and make more money. With the increasing demand for service of this sort, you must equip to handle the business, or lose it to your more enterprising competitor.

**Model 280**

**Weston GARAGE TESTING INSTRUMENT**

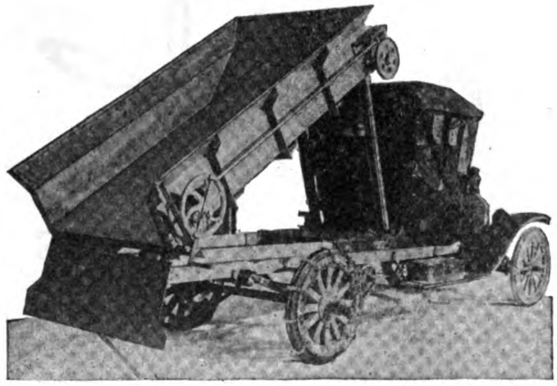
is your one great and urgent necessity, to enable you to locate electrical troubles quickly and apply the proper treatment to remedy them. Its possession will place you a long way ahead of your competitor not so equipped. This instrument is extremely accurate, durable and serviceable. It is the most practical electrical equipment you can install.

The Weston Company is pre-eminent throughout the world in the production of highest grade Electrical Precision Instruments.

WRITE US NOW for our Special Proposition to Garage Owners. It will show you how you can handle electrical apparatus intelligently and profitably.

**WESTON ELECTRICAL INSTRUMENT CO., 103 Weston Ave., Newark, N. J.**

*23 Branch Offices in the Larger Cities*



**SPECIAL FOR FORD ATTACHMENTS**

**Quadruple Worm Gear Drive HAND HOIST**

**Speedy, Powerful, Light in Weight and very Efficient**

Price $206.25 for body and hoist complete ready to mount on chassis frame.

Bodies two sizes, capacity in pounds the same.

Size of the one cu. yd. body 96x44x12 in., straight sides only. Carrying capacity from 2700 to 3000 pounds of gravel, sand or crushed stone.

Size of the two cu. yd. body, 96x44x12 inches with flare of 6 inches. Carrying capacity from 2700 to 3000 pounds of soft coal.

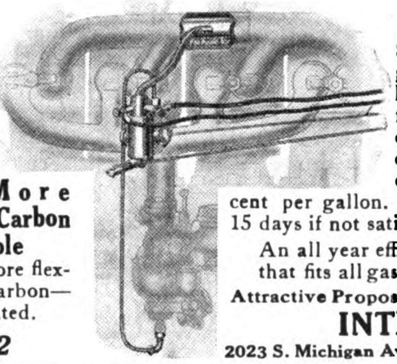
The retail price of either outfit is $206.25.

Approximate weight of either body is 550 pounds.

Builders of Hoists ranging in capacity from one to five tons.

*Ask for dealer's proposition*

**THE AUGLAIZE MOTOR CAR CO.**
**New Bremen, Ohio**



**PERFECTION 5-IN-ONE VITALIZER**

**Instant Heating Unit That Eliminates Cold Weather Troubles.**

A combination Heating Unit comprising Moistener, Electric Super-Heater Primer, Exhaust Super-Heater and Accelerator.

**More Power — More Mileage — Less Carbon —Less Trouble**

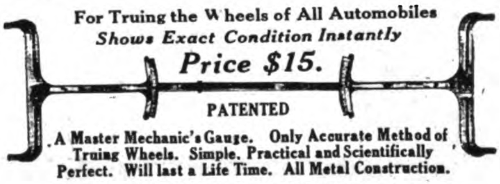
A smoother and more flexible engine with carbon—Practically Eliminated.

*Price $12*

Starts a cold engine instantly. Increased satisfaction in the operation of your car with a saving of 25 to 60 per cent per gallon. Money back in 15 days if not satisfactory.

An all year efficiency device that fits all gasoline engines.

Attractive Proposition for Dealers.



**Perfection Wheel Truing Gauge**

For Truing the Wheels of All Automobiles
*Shows Exact Condition Instantly*
*Price $15.*
PATENTED

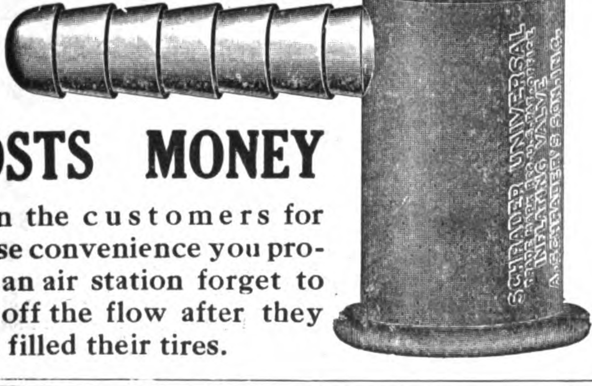
A Master Mechanic's Gauge. Only Accurate Method of Truing Wheels. Simple, Practical and Scientifically Perfect. Will last a Life Time. All Metal Construction.

*Save Your Tires*

Keep Your Wheels in Alignment.

A Real Service for Car Owners, Fleet Owners, Repair Men, Garages, Tire Representatives and Dealers. Can be Used on Any Automobile—Anywhere.

**INTERNATIONAL MOTOR PRODUCTS CO.**
2023 S. Michigan Avenue — Perfection Motor Products — Chicago, Ill., U. S. A.



**FREE AIR COSTS MONEY**

when the customers for whose convenience you provide an air station forget to turn off the flow after they have filled their tires.

Guard against this waste by attaching a

**Schrader Automatic Inflating Valve**

to your air hose.

Thanks to this appliance your bottled air locks itself into the tank the minute it is taken off the tire-valve. You turn on the air by pressing the nozzle of the inflating valve against the tire-valve and you turn it off by removing the device from the tire-valve.

Made to fit any diameter of hose from ¼ in. to ⅝ in.

**PRICE $1.25** in U. S. A.

**W. S. S.**

| | | |
|---|---|---|
| We | Suggest | Stamps |
| War | Savings | Stamps |
| Without | Shells | Soldiers |
| Would | Soon | Succumb |
| War | Savings | Stamps |
| Will | Supply | Soldiers |
| With | Shells | |

*Buy all you can and help to win the war.*

*Manufactured by* **A. SCHRADER'S SON, Inc.**
**800 Atlantic Avenue, Brooklyn, N. Y.**

*Schrader products were awarded a Grand Prize and two Gold Medals at the Panama Pacific International Exposition. "There's a Reason."*

# Safety

Gasoline, when stored properly, is harmless. It cannot be the cause of fires nor aid in their destructiveness.

Safety—should be the first consideration in selecting the right equipment for the storage of oils and gasoline.

Be sure that your supply of these liquids is stored in

**BOWSER** ESTABLISHED 1885

*OIL and GASOLINE STORAGE SYSTEM*

Time, and experience in many tests, have proven their value as life, property and business protectors, without a single failure.

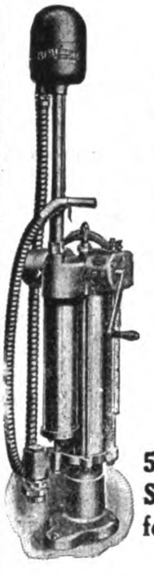
Bowser Systems are built for any capacity—they filter and measure gasoline correctly and do it quickly.

Write for interesting Fire Booklet.

**S. F. BOWSER & CO., Inc.** Fort Wayne, Ind., U. S. A.

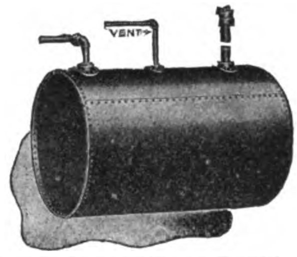
Sales Offices in All Centers

Representatives Everywhere



*Cut No. 101*

5-Gal. Gasoline Storage Outfit for Indoor Use



*Type "C"*
Underground Tank

# Speederator

**Makes Your Ford Act Like a Six**

Speederator connects with carburetor and automatically regulates engine speed to load.

Prevents racing, bucking, stalling.

Regular Ford foot pedals work it.

Money-back guarantee. Can be put on in 20 minutes.

***Price $4.85—Far West $5.05—Canada $6.85***

**VERSAL PRODUCTS MFG. CO., Detroit**
Formerly Detroit Starter Co.

# Garford MOTOR TRUCKS

**Trucks of 1, 1½, 2, 3½, 5 and 6 ton capacity. 4½, 7 and 10 ton Tractors. The Garford Road Builder.**

**THE GARFORD MOTOR TRUCK CO., Lima, Ohio.**

## Your Prospective Customers

are listed in our Catalog of 99% guaranteed Mailing Lists. It also contains vital suggestions how to advertise and sell profitably by mail. Counts and prices given on 6000 different national Lists, covering all classes; for instance, Farmers, Noodle Mfrs., Hardware Dlrs., Zinc Mines, etc. *This valuable Reference Book free.* Write for it.

## Strengthen Your Advertising Literature

Our Analytical Advertising Counsel and Sales Promotion Service will improve both your plan and copy, thus insuring maximum profits. Submit your literature for preliminary analysis and quotation—no obligation.

**Ross-Gould Mailing Lists St. Louis**

# *The Automobile Journal*

A quality Magazine with prestige and circulation that brings results to advertisers.

—:::—

TIMES BUILDING
PAWTUCKET, R. I.

# Bunting Bearing Bronze IN Cored Bars

BUNTING BEARING BRONZE

**Bunting Bearing Metal is standard today with both Manufacturer and Repairman.**

**Is for sale by most any Jobber or can be purchased direct from us.**

**STOCK SIZES**

| PIECE NO. | Outside Diameter | Inside Diameter | Length | Approximate weight |
|---|---|---|---|---|
| A | 1 | ½ | 12 | 2 |
| B | 1¼ | ½ | 12 | 3½ |
| C | 1½ | ¾ | 12 | 5 |
| D | 1¾ | ¾ | 12 | 7 |
| E | 2 | 1 | 12 | 8½ |
| F | 2¼ | 1¼ | 12 | 10 |
| G | 2½ | 1½ | 12 | 11½ |
| H | 2¾ | 1¾ | 12 | 12¾ |
| I | 3 | 2 | 12 | 13¾ |
| J | 3¼ | 2¼ | 12 | 15½ |
| K | 3½ | 2½ | 12 | 17 |
| L | 4 | 3 | 12 | 21 |
| M | 4¼ | 3¼ | 12 | 20 |

**The Bunting Brass & Bronze Co.**
**727 Spencer Street Toledo, Ohio**

# VULCAN QUALITY

AUTOMOBILE SPRINGS

*SPRINGS IN STOCK FOR ALL CARS*

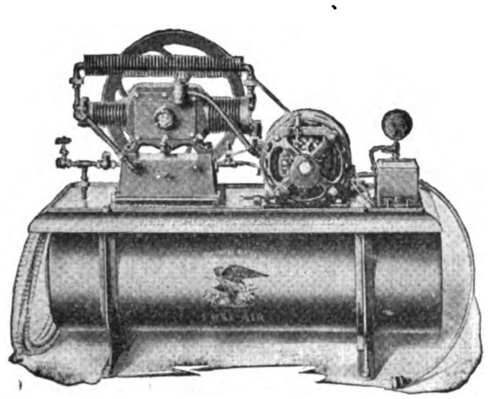
**90,000 Springs. 588 Types.**

**6—FACTORY BRANCHES—6**

St. Louis, Mo 1402 Chestnut St.
Minneapolis, Minn 1024 Hennepin Ave.
Reading, Pa. 538 Franklin St.
Dallas, Tex. 209 Houston St.
Sumter S C. 29 Caldwell St.
Richmond, Ind. Colonial Bldg.

**FACTORY RICHMOND, IND.**

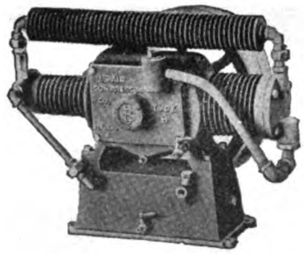
**JENKINS VULCAN SPRING CO.**



**The U. S. De Luxe Automatic Air Unit** utilizes the proven principle of **Two Stage** operation and is without doubt the most efficient air compressor in existence—the ideal unit for free air stations, garages and tire shops.

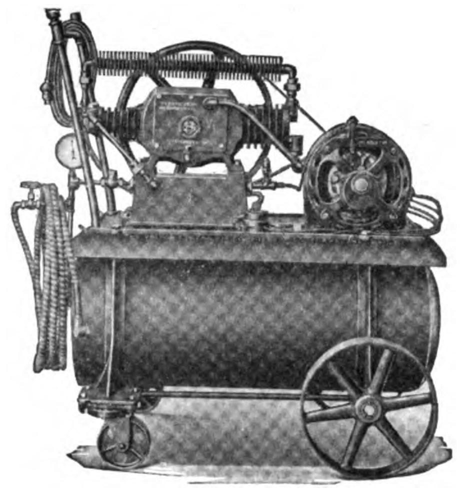
The De Luxe proves a business getter wherever installed. Many of the better garages contain this outfit and several companies of national prominence use it as standard equipment.

Capacity 4 cu. ft. per minute. Contains 14 points of excellence.



U. S. **Two Stage** Compressors without tank, motor or controlling equipment can be furnished if desired having tight and loose pulleys as illustrated or large single wheel for direct motor drive. Capacities 4, 10 or 20 cu. ft. per minute.

**The United States Line** comprises 20 different numbers in **Two-Stage** and **Single-Stage Types,** and various individual equipment adapted for forming combinations of almost unlimited kinds and capacities.



**U. S. Portable Compressor No. 35** has a capacity of 4 cu. ft. per minute and utilizes the **Two-Stage** principle to which the remarkable success of U. S. compressors is due.

**The high efficiency of this unit is particularly desirable, as ability to get immediate results is more necessary in a portable than in any other unit.**

**Equipment 35 is also extensively used in individual plants for blowing dust from motors, generators and other machinery.**

## The United States Air Compressor Co.,

**6538 Carnegie Ave., Cleveland, Ohio**

Please send your new Catalog advertised in Accessory and Garage Journal to

Name.................................................Address.................................................City.................................

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# SELL SULLIVAN TRUCKS

One of the few staple and practical trucks on the market.

Our selling policy and proposition is the most liberal ever offered to the trade.

**One Model, 3,000 Lbs. Capacity**

**Chassis Price, $1,600**

***Write for complete details***

**SULLIVAN MOTOR CAR CO.**

**Rochester, New York**

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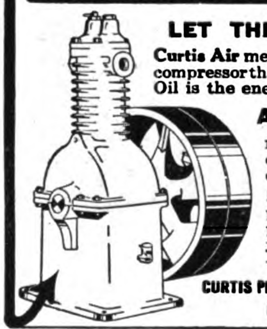
**CURTIS AIR**
**FREE FROM OIL**

# MOTORISTS *Have* CONFIDENCE IN THIS SIGN

**LET THEM FIND IT AT *YOUR* DOOR.**



**Curtis Air** means more mileage, because **Curtis** is the only air compressor that can't flood cylinder with more oil than it can use. Oil is the enemy of rubber. It rots tires, causing blow-outs.

**A Curtis Compressor Is Dependable**

requires practically no attention, costs very little, quickly pays for itself, always delivers the kind of cool, clean air that makes tires last longer.

**5 sizes and 125 combinations.** Write for full particulars and let us tell you why the **Curtis** will prove to be your best investment. Ask your jobber for prices—but be sure and mention **Curtis** —the name is your protection against substitution

**CURTIS PNEUMATIC MACH. CO. 1621A Kienlen Ave. St. Louis, Mo.**
**Branch Office: 531A Hudson Terminal, New York**

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**Guaranteed Bearings**

We Exchange Rebuilt Bearings for old or worn ones

**BILODEAU** BALL BEARINGS WORKS

## THE SERVICE WE GIVE

We save you time and money and guarantee the quality of the bearings sold. This service is quick and is developed to meet the needs of thousands of garages, service stations and repair shops.

We build bearings of all kinds, experiment and originate bearings for special uses.

Orders for new bearings of any type or size promptly filled.

**Send today for 1917 catalogue, listing types, sizes and prices of standard bearings. Trade discounts confidential.**

**BILODEAU BALL BEARING WORKS**
**66 Stanhope Street, BOSTON. MASS.**

---

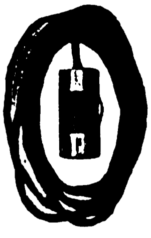
ELECTRIC GLUE POT

Mabey's Dry Heat Electric

# Glue Pot

No flame; no soot or smoke. All danger of fire is eliminated

| Capacity | Price without cover |
|---|---|
| 1 qt. | $ 9.50 |
| 2 qts. | 11.00 |
| 3 qts. | 12.75 |
| 4 qts. | 15.75 |



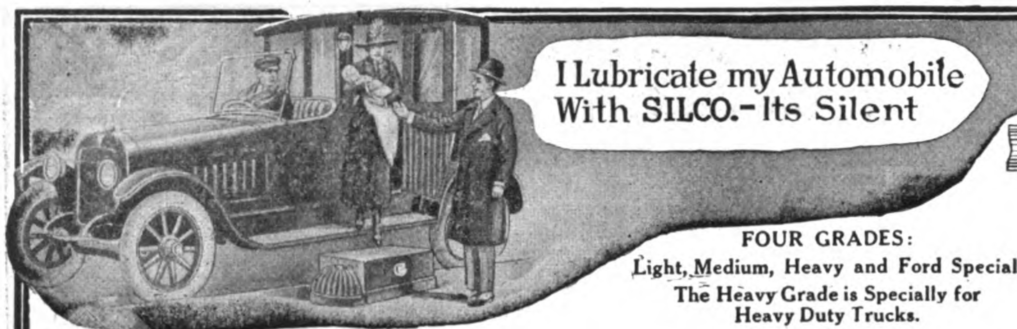
**Century**

**Automobile Cigar Lighter, Complete $1.00 Each, F. O. B. Indianapolis.**

***DEALERS—Write For Prices.***

**MABEY'S ELECTRIC & MFG. CO.**

**968 Ft. Wayne Avenue INDIANAPOLIS, IND.**



AUTOMOBILE
SMOOTH SILCO AS SILK
LUBRICANTS

FOUR GRADES:
Light, Medium, Heavy and Ford Special.
The Heavy Grade is Specially for
Heavy Duty Trucks.

**LOOK FOR THIS TRADE MARK**

**IT PROTECTS THE DEALER AND CONSUMER**

**SILCO**

**TRANSMISSION AND DIFFERENTIAL GREASE**

**STOPS THE LEAKS**

**FINDS THE SQUEAKS**

**INSURES CAR SERVICE**

SILCO is the perfect lubricant for transmission and differential gears. It possesses far greater lubricating properties than ordinary greases. It forms a positive and lasting cushion between all points of contact, and quiets noisy gears. Silco does not leak or drip, and its efficiency is unaffected by heat or cold.

SILCO minimizes friction, and eliminates expansion from heat, thus preventing undue wear on gears and bearings. Cuts repair bills and is guaranteed to afford entire satisfaction.

*Jobbers and Dealers: Our inducements are extremely liberal. Send for further lubricating facts and special trade discounts.*

*WRITE TODAY TO*

**INTERNATIONAL LUBRICANTS COMPANY**

Manufacturers of SILCO Products

Home Office:
75 State Street, Boston, Mass.

New York Office:
51 East 42nd Street.

**THE CONGDON & CARPENTER CO., Rhode Island Distributors, Providence, R. I.**

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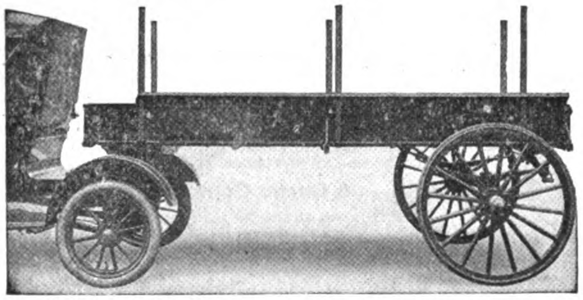
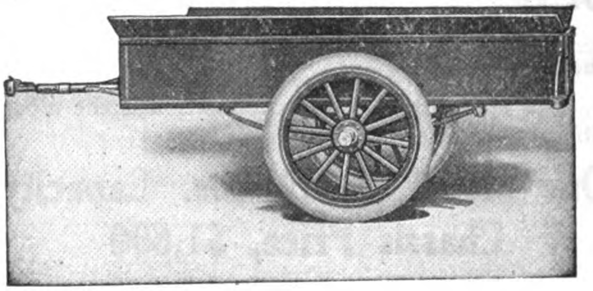




# Haul a 3000-lb. Load With Your Ford Car

A Ford runabout equipped with a Rocking Fifth Wheel, will have light truck capacity when used with **STOCKBRIDGE** 2000 or 3000 pound semi-trailers, and by uncoupling the body, which can be done in a very few minutes, the machine has all the utility of the pleasure car.

**STOCKBRIDGE Semi-Trailers** are the most practical equipment built. They are designed for truck service. They are operated with Ford economy. They can be coupled or uncoupled by any driver without help. The Rocking Fifth Wheel is easily removed. No time is lost. Simply remove six bolts. The owner has a car or a unit with truck capacity and makes no sacrifice of the qualities of either type of vehicle.

The car and semi-trailer can make 20 miles an hour on good roads and can climb any travelled grade.

**STOCKBRIDGE Semi-Trailers** are constructed for truck service. The bodies are express type, with flareboards or flareboards and stakes. The brief specifications are:

| | 2000 Pounds | 3000 Pounds |
|---|---|---|
| AXLE | 1 5-8 in. square, Timken roller bearings. | |
| SPRINGS | Platform type, 1 3-4 in. wide | Platform type, 2 in. wide |
| WHEELS | 46 in. outside diameter, artillery type hubs, 1 5-8 in. spokes | |
| TIRES | Solid rubber, 1 3-4 in. flat top. side wire | 2 in. flat top. side wire |
| EQUIPMENT | Complete Rocking Fifth Wheel ready for attaching | |
| PRICES | $195, f. o. b. Springfield, Mass. | $225 f. o. b. Springfield, Mass. |

**SPRINGFIELD TRAILER,** 800 pounds capacity, express body, semi-elliptic springs, 1 1-4 in. axle, ball bearings, 12-spoke automobile wheels, 30x3 in. pneumatic tires, price **$105,** f. o. b. Springfield.

**STOCKBRIDGE BODY COMPANY,** 130-6 UNION STREET
SPRINGFIELD, MASSACHUSETTS

**Akron-Williams**

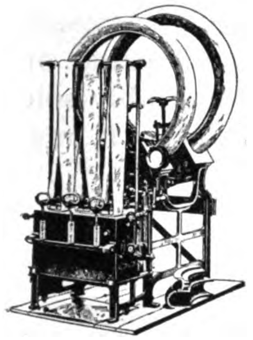
**TIRE REPAIR EQUIPMENT**

AKRON-WILLIAMS
A-W
PRODUCTS

Used by ALL leading tire companies in their own factories, and sold and recommended by them to their Dealers all over the World.

Complete line of tools and equipment for all tire and tube repairing.

***Send for late catalog.***
"*Everything for the Tire Repairman*".



**THE WILLIAMS FOUNDRY & MACHINE COMPANY**
**Ash Street** **Akron, Ohio.**

Exclusive distributors for California:
The Waterhouse & Lester Co., San Francisco, Oakland and Los Angeles.

**Vulcanizing With a Vanderpool Vulcanizer Brings Big Profits**

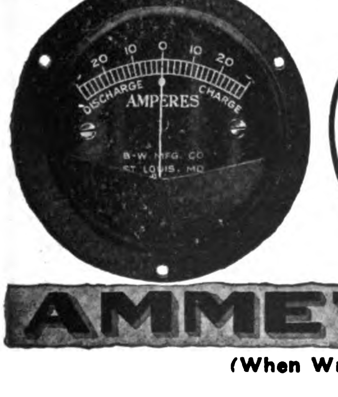
**3 Cavity Combination Vanderpool Vulcanizer**

Send in this ad with your name and we will mail catalogue and prices.

Here is an exceptional opportunity for Garages as well as Vulcanizing Companies to secure a vulcanizer that will turn out high-grade work at a small cost. The fuel saved alone will pay for the machine in a short time—then you will "cash in" on your investment. This plant, the Vanderpool Vulcanizer, is meeting with enthusiastic approval of hundreds of satisfied users all over the country. Unsolicited testimonials from the various companies now using the "Vanderpool" testify to the dependability, efficiency and economy of this "Vulcanizing Wonder." One man writes that the first month's profits paid for the plant. No experience needed—we teach you how. It occupies very little floor space, and "once bought, you will never have to buy again."

VANDERPOOL CO.
Springfield, Ohio

**B-W DIRECT CURRENT**



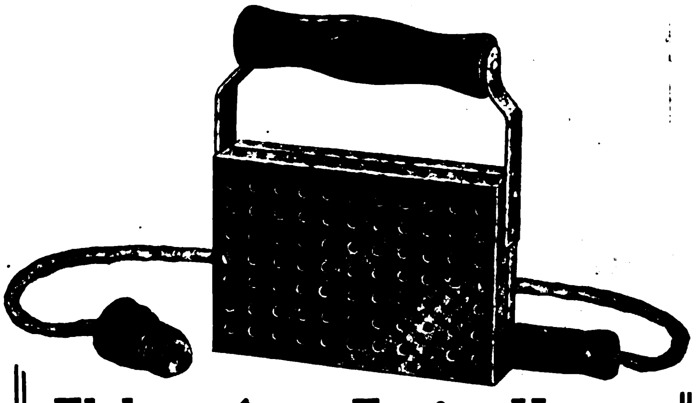
STURDILY CONSTRUCTED to retain accuracy under the most severe conditions. Handsome in appearance. Made in both flush and surface types. Finished in bright nickel or black rubberoid as desired.

**Better Ammeters Cannot Be Purchased, PRICE.......$1.90**

***Send For Literature***

**Ballman-Whitten Mfg. Co.,**
4440 Olive St. St. Louis, Mo

**AMMETERS**



**Elektro Auto Engine Heater**

**TO GO UNDER THE HOOD**

***Engines Kept Warm in Cold Garages or During Winter Parking***

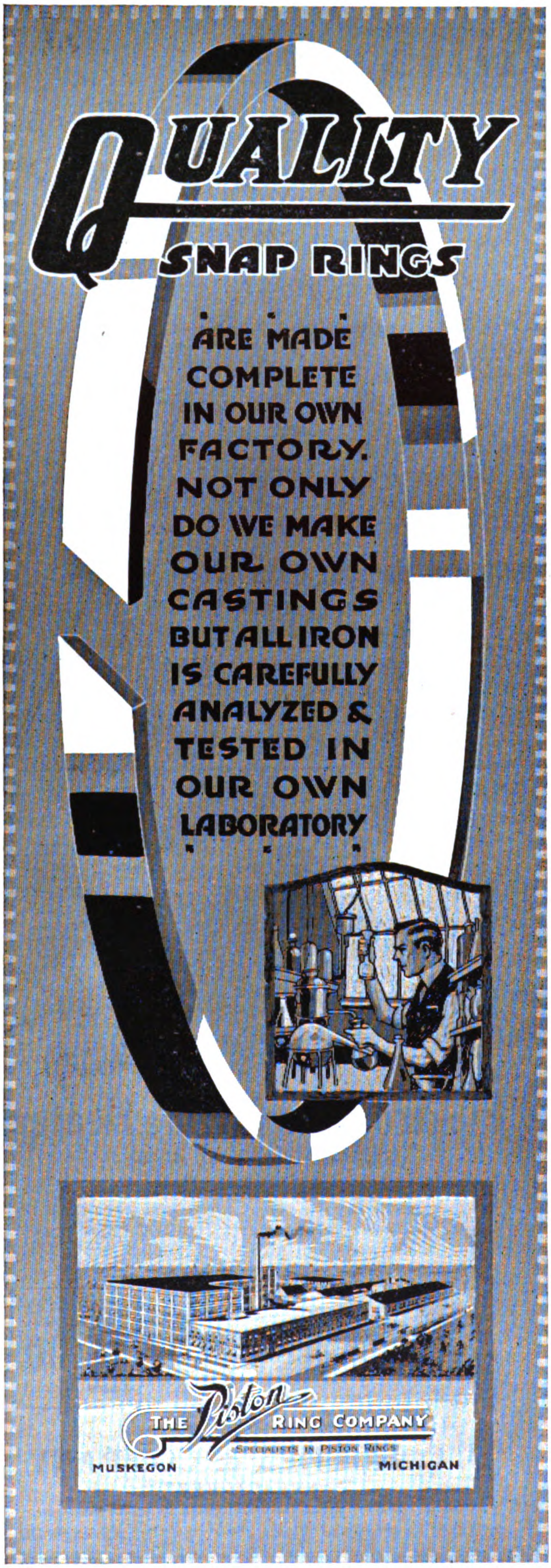
Can be used in any car. Heat where you want it, in the coldest weather. Engine starts right off. Saves your starter. A slow heat all night at a nominal cost. Absolutely safe around gasoline. Heat well regulated.

No more frozen radiators or cranky cranks. No more hot water baths needed for the carburetor. No more priming or radiator draining nuisances. Just what everybody has been looking for.

**10-Foot Cord and Plug Complete**
**$3.00**
**Liberal Discounts**

***Send for Circular 129***

**D. C. HUGHES & COMPANY**
MANUFACTURERS
A Complete Line of Percolators, Toasters, Flat Irons, Stoves, Toy Ranges, Etc.
**4642-44 Ravenswood Ave.** **Chicago, Ill.**



# QUALITY SNAP RINGS

ARE MADE COMPLETE IN OUR OWN FACTORY. NOT ONLY DO WE MAKE OUR OWN CASTINGS BUT ALL IRON IS CAREFULLY ANALYZED & TESTED IN OUR OWN LABORATORY

THE Piston RING COMPANY
SPECIALISTS IN PISTON RINGS
MUSKEGON MICHIGAN

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MOSCO

# Timer For Ford Car

Extra heavy pressed steel shell, aluminum finish. Insulating ring of gray bone fibre.

Terminals insulated all the way through. One-hand, self-closing oiler. Pressed steel arm and compression spring on brush assembly. Brush assembly sold separately. Interesting prices. Immediate delivery.

***MOTOR SPECIALTIES CO.***
***MANUFACTURERS***
***WALTHAM MASS.***

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## The MANLEY GARAGE AND SHOP EQUIPMENT

**Every garageman and repairman should get our catalog. You'll find in it just the time and labor savers you need, and their prices will astonish you by their moderateness.**

***Send for your copy of this catalog today***

**THE UNITED ENGINE & MFG. CO.**
**Hanover, Pa.**

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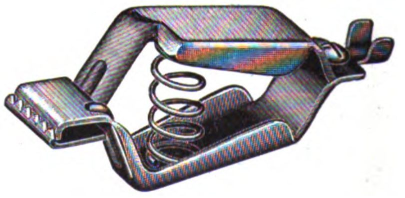
## UNIVERSAL BATTERY CLIPS

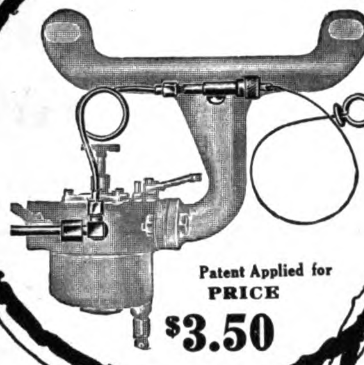


Offer a quick and ready means of connecting storage batteries for charging. Simply fit your connecting cords with these clips and snap them over the battery terminals. **No. 21-A—lead plated—1½" spread of jaws.** Sample mailed postpaid for 15c in stamps.

**Single Lots, Each 20c. Lots of 10, Each 15c.**
**Lots of 100, Each 12½c.**

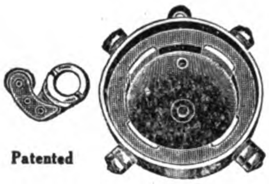
**R. S. MUELLER & CO., 431 High Avenue, Cleveland, O.**

# J&B Timers, Gasoline Injectors and Spark Plug Shields for FORDS



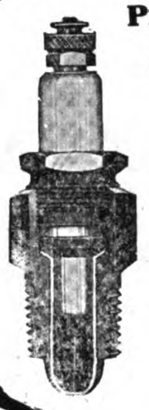
**The J & B Gasoline Injector** is absolutely dependable, easily installed without changing motor or cutting dash. A pull on ring through radiator forces spray of gasoline into intake.

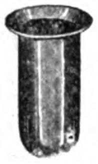
THE
**J & B TIMER**
is simple in construction and easily oiled through patented spring-hinged dust-proof cover. It outwears any other timer and always works. All rotor difficulties are overcome.



**Price $1.40**

Price
**$1.00**





Patent Applied for

**The J & B Spark Plug Shield** absolutely prevents fouling and insures snappy ignition and continuous running without necessity of cleaning plugs. Designed for Champion X Plugs on Fords.

Address 67 Eagle St., Pittsfield, Mass.
94-6

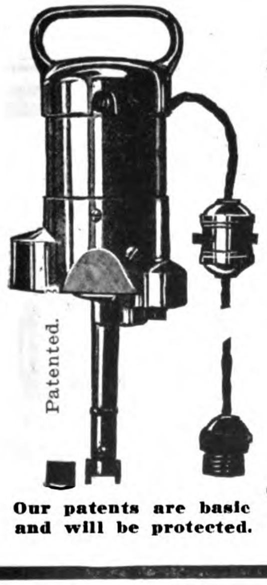
**J&B Mfg. Co. Pittsfield, Mass.**

---

# STENMAN ELECTRIC VALVE GRINDER

The STENMAN ELECTRIC VALVE GRINDER bears the same relation to hand valve grinding that the vacuum cleaner does to the old corn broom method of carpet cleaning. Once tried it is indispensable. Ten days' usage and it has paid for itself.

Mull that over a moment—Visualize it—Don't you sense the possibilities of what this device means to you?



## *REPAIR SHOP PROFITS ARE MADE ON LABOR*

YOUR REPAIR SHOP REQUIRES IT. EFFICIENCY CALLS FOR IT.
YOUR CASH DRAWER DEMANDS IT.

The STENMAN will grind a set of eight valves in 20 minutes. Whereas, it takes two hours or more to grind them by hand. And we guarantee the Stenman to do a better and more even job. Also—that a novice can operate it.

Plugs in on any lamp socket—A or D current. Regular stock 110, 130 volts. Made for higher voltage where required.

**After the most severe tests and tryouts had been made by their engineers these Grinders have been bought and are in use by the U. S. Army, Naval, Aviation and Postal Departments. Also, by the U. S. Steel Corp., Standard Oil, Gulf Refining, Western Electric and many up-to-date garages and shops in the East.**

**The universal use of the STENMAN ELECTRIC VALVE GRINDER is limited only to our ability to supply them.**

An interesting distributing proposition to high class jobbers where we are not already represented.

**Our patents are basic and will be protected.**

**The Stenman Electric Valve Grinder Co., Inc.** 42 Southbridge St. Worcester, Mass.

# Talking 100% Lubrication to Your Customers

**We are going to demonstrate to your customers why they should use Dixon's Graphite Automobile Lubricants and prove to you why you should sell them. Their use means more power to your customers and better business for you.**

**Our force of specialty men is spreading the message of 100% Lubrication. Wherever they go they convince dealers and motorists that**

**DIXON'S**
**GRAPHITE**
**Automobile**
**LUBRICANTS**

**are better lubricants. Demonstration proves it every time.**

**This year we will again back up the efforts of our sales force with a campaign of newspaper advertising that will reach millions of motorists. We are going to keep right at it, week after week, as steadily as an engine that never "skips".**

**Our salesmen prepare the ground. Our advertising sows the seeds of heavy sales of Dixon's—the 100% Lubricants. Be ready to garner your share of this business and cash in on our campaign of lubrication education.**

***Write for Dixon's Dealer's Deal No. 49G***
**Made in Jersey City, N. J., by the**

**JOSEPH DIXON CRUCIBLE CO.**
**Established 1827**

---

# IMPERIAL
## WELDING CUTTING EQUIPMENT

## Big Profits For You In Auto Repairs

Now, more than ever, Imperial Welding and Cutting Equipment will be a profitable investment for your garage or repair shop. Broken transmission cases, axles and cracked cylinders are quickly and permanently welded, whether in the shop or on the road. Always ready for use. Cuts all steel and wrought iron and decarbonizes cylinders more satisfactory than other methods.

**FIRST IN ECONOMY, EFFICIENCY, SAFETY AND SPEED**

Imperial Equipment daily proves itself a necessity, often paying for its cost through the saving effected by a single operation. Write today for our Free Catalog containing complete information regarding cost of operation, work done, etc.

**TO LIVE JOBBERS**

**Jobbers, alive to the possibilities of the auto repair field, will avail themselves of the profit opportunities of our whole line. Beside Imperial Welding and Cutting Equipment and supplies, we make high grade Accessories such as Imperial Compression Couplings, Gasoline Cocks, Strainers. Etc. Write today!**

**THE IMPERIAL BRASS MFG. CO.**
**517 So. Racine Ave., Chicago**

---

# Push Your Business —

*I'll Show You How to Increase Your Winter Trade.*

THERE is business all around you. Good, profitable business that will bring in many an extra dollar. Don't wait for spring. Do business all winter. I'm helping garage men and supply dealers to do more business. I'll help you. Write on your business paper that you're ready for more business. I have nothing to sell but service backed by nine years' experience in promoting sales successfully.

*Write*
**Edward W. Bacon**
**BACON SERVICE**
**151 Grand St., New York**

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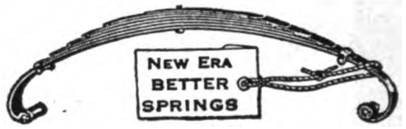
**Stop the Spring Breakage**



It's a poor policy to risk repeating the annoyance of a broken or weak spring—and the delay—by saving only a very little in buying or selling a **cheaper** spring instead of a **"New Era BETTER Spring."**

Don't replace a broken spring with one no better.

Wise dealers sell only the best.

**New Era BETTER Springs** are the oldest and largest used line for replacement—at same price as from car factories. Made for all cars, **guaranteed** one year against breakage or sagging, graphited between leaves for two years' lubrication.

**New Era Spring & Specialty Co.**
**1177 Hamilton Ave., Grand Rapids, Mich.**

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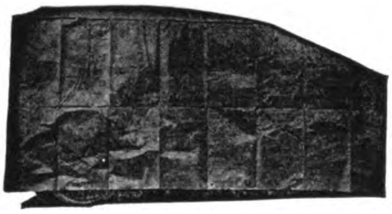

# KENNEDY AUTO STORAGE COVERS

Furnish efficient and economical protection for cars in dead storage. They are made of heavy, durable paper in standard sizes to fit any cars.

**MADE ONLY BY**
**THE KENNEDY CAR LINER & BAG CO.**
**SHELBYVILLE, IND.**

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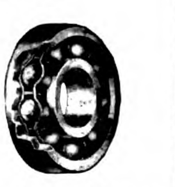
# NEW DEPARTURE BALL BEARINGS

*Strength*
*Stamina*
*Service*



The New Departure Manufacturing Co., Bristol, Conn.
*Conrad Patent Licensee*

# The G. H. Dyer Company's Products

INCLUDE

# LABOR SAVING, TIME SAVING DEVICES

FOR EVERY

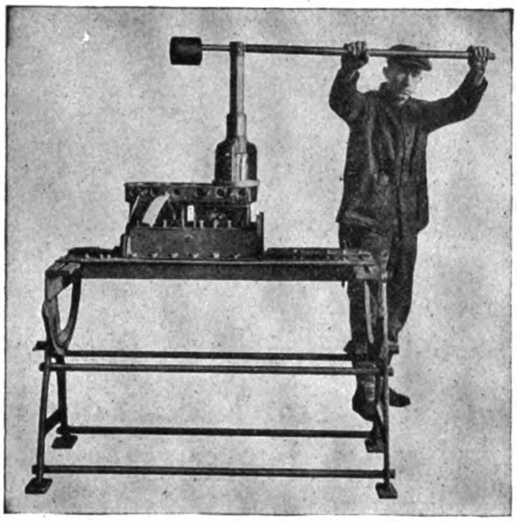
## GARAGE MAN

## REPAIR MAN

### REGULAR
### Ford Type Piston

Made
In
Standard
and
Any
Oversize

All Measurements Correct
Max. Variation 3 oz. in Weight
Step-Cut Rings High Finish
Highest Grade Throughout



**FORD CYLINDER REAMER**
1-32 Oversize

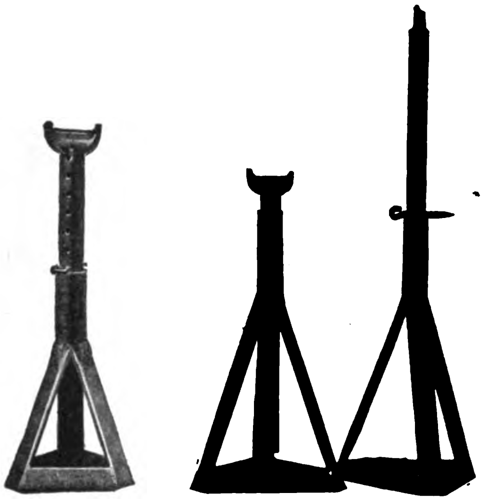
### LIGHTWEIGHT
### Ford Type Piston

Made
In
Standard
and
Any
Oversize

ONE POUND LIGHTER THAN
THE FORD PISTON
*Adds* power, speed, flexibility.
*Lessens* wear, vibration, cost.

No Better Piston Made
Step-Cut Rings High Finish
PRICE EXTREMELY LOW

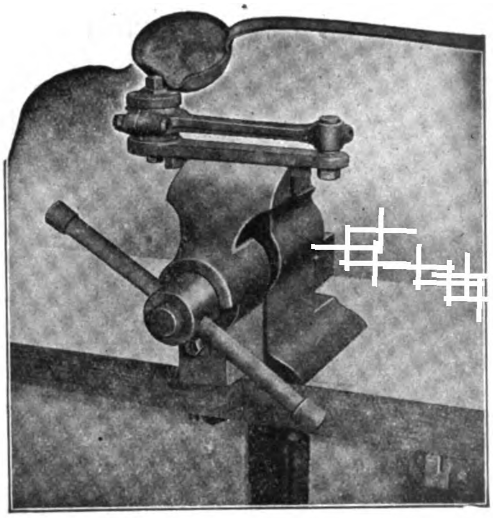
**Easy to Operate. Does Accurate, Quick Work. Makes Big Profits**



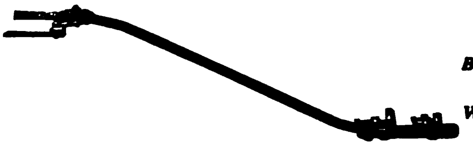
**DYER METALLIC BLOCKING**
SAFE STRONG COMPACT INEXPENSIVE
Home-made blocking, boxes, etc., are dangerous and inconvenient

## We
## Manufacture
## Oxy-Acetylene
## Apparatus

*NOTED FOR*
*High Efficiency*
*Best Quality*
*Long Service*
*LOW PRICE*



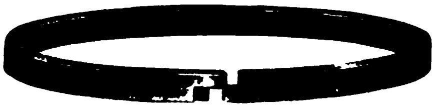
**DON'T LOSE VALUABLE TIME**
waiting for Ford connecting rods. Transportation is slow—the supply low. Rehabbit the old rods in a FEW MINUTES for a FEW CENTS with DYER JIG.
EASY TO OPERATE. PERFECT WORK.



*Buy from your jobber or direct*

*Write for Catalogue*

With TOW-FORD one man in a Ford can tow and accurately steer *one* or *two* other Fords.
LIGHT STRONG EASILY ATTACHED LOW PRICED



The Taylor Leakage-Proof Piston Ring.
3¼x¼
OIL TIGHT GAS TIGHT
Eccentric and One Piece **50c** No Points to Break
Interlapping, Underlocking Joint

## THE G. H. DYER CO., - - Cambridge, Mass.

A Niagara Grinder on the job

He works faster with Carborundum Compound

One use for Aloxite Cloth

## Three Carborundum Products that will Help You Keep Your Repair Job Promises

EVERY customer is after you now. He wants his car and he wants it with a rush. Here are three Carborundum products that will help you cut the repair job time and increase efficiency.

Carborundum Niagara Grinders for instance—handy, durable little machines for quickly grinding a tool, a repair part or fitting—for countless little odd jobs. Each machine equipped with a Carborundum Wheel. Niagara Grinder No. 4 is the machine you want.

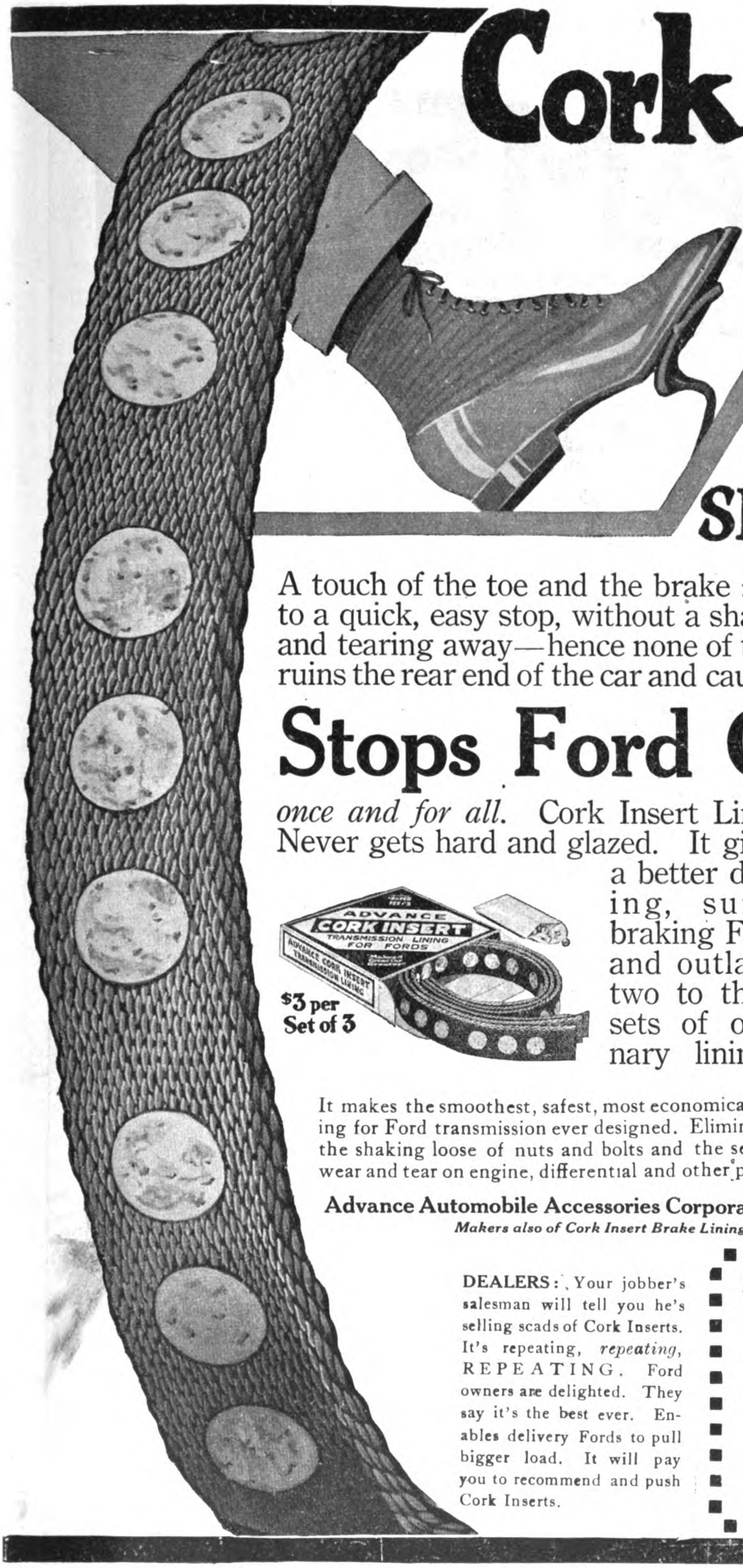
Then there is Carborundum Valve Grinding Compound—a mixture of the hard, sharp, clean-cutting Carborundum grains with a high-grade grease. *Carborundum Compound cuts*—it cuts clean and quick and because it is uniform, it leaves a smooth, unscored valve seat. Saves time, saves effort. Put up in one- and five-pound tins—coarse and fine.

Aloxite Cloth is the other member of the trio. Coated with Aloxite grains—a wonderful artificial abrasive remarkably hard, sharp, tough—it's faster cutting, longer lived, does better work by far than the old-time emery cloth. There are a hundred different ways to use it in your garage.

Buy Aloxite Cloth in economy rolls—cut in six handy widths—any grit—fifty yards to the roll.

*Send for the complete circular of Carborundum Products for the garage*

**The Carborundum Company, Niagara Falls, N. Y.**


ADVANCE
CORK INSERT
TRANSMISSION LINING FOR FORDS
Advance Cork Insert Transmission Lining

# Cork Insert takes hold at the Slightest Pressure

A touch of the toe and the brake *responds.* The Ford comes to a quick, easy stop, without a shake or a jerk. No grabbing and tearing away—hence none of that racking vibration, which ruins the rear end of the car and causes heavy repair expense. It

## Stops Ford Chattering

*once and for all.* Cork Insert Lining never loses its "grip." Never gets hard and glazed. It gives a better driving, surer braking Ford and outlasts two to three sets of ordinary linings.

**$3 per Set of 3**

It makes the smoothest, safest, most economical lining for Ford transmission ever designed. Eliminates the shaking loose of nuts and bolts and the severe wear and tear on engine, differential and other parts.

### No-Slip Fan Belts For Fords

**$1.00 for 1917 Fords.**
**.85 for all previous models.**

ADVANCE
CORK INSERT
FAN BELT for FORDS
ADVANCE CORK INSERT FAN BELT FOR FORDS

The slip of the ordinary fan belt used with Fords is estimated at 25 to 50 per cent. No wonder the engine overheats! Cork Insert Fan Belts keep the fan turning with the speed of the engine. They always retain their no-slip efficiency. Give exceedingly long service.

**Advance Automobile Accessories Corporation, Dept. D3-1 56 E. Randolph St., Chicago**

***Makers also of Cork Insert Brake Linings for all passenger cars and trucks***

**DEALERS:** Your jobber's salesman will tell you he's selling scads of Cork Inserts. It's repeating, *repeating,* REPEATING. Ford owners are delighted. They say it's the best ever. Enables delivery Fords to pull bigger load. It will pay you to recommend and push Cork Inserts.

**Dealer's Coupon** Check and Mail Today!

Advance Automobile Accessories Corporation
Dept. D 3-1, 56 E. Randolph St., Chicago

Enter our order for:
☐ Dozen sets of Advance Cork Insert Transmission Linings for Fords.
☐ Dozen Advance Cork Insert Fan Belts for 1917 Fords.
☐ Dozen Advance Cork Insert Fan Belts for 1916 or earlier model Fords.

Deliver through jobber mentioned below.

Name ..........................................................

City .................................. State ...................

Jobber's Name ..................................

# ADAMSON

THE COMPLETE LINE OF

## VULCANIZERS

*Money Makers for the Dealer*

*Money Savers for the Motorist*

**MODEL "E" $1.00**

**5-Minute Vulcanizer**

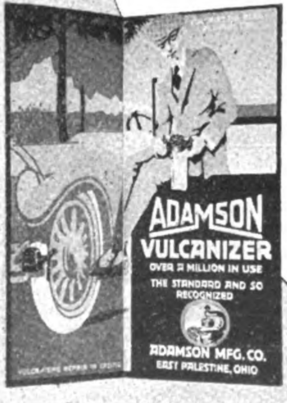
Uses Adamson Dry Fuel or gasoline. Repairs tube punctures permanently in 5-minutes.

**MODEL "T" $1.50**

For ordinary repairs on inner tubes.

**MODEL "U" $2.00**

Repairs tubes and cases. Mends tread cuts and small blow-outs.



Write for Adamson store displays and dealer helps

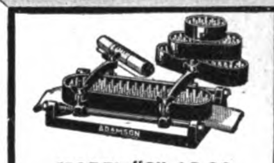
## DEALERS:

There's an Adamson for every kind of tube and casing repair that a motorist can make. You needn't miss a single sale when you stock the Adamson line.

The high price of tires and tubes and the nation-wide demand for Conservation will practically double the number of Adamson users—now over a million.

To show Adamsons is to sell them. Every motorist knows they are easiest to use, quick and sure in results, and make the strongest possible repair.

Adamsons cost least to buy and operate; any model will use common gasoline—always dependable and easy to get.



**MODEL "S" 12.00**

For private garages and repair shops. Mends cases and tubes.

**ADAMSON REPAIR GUM**

Essential for best results with any portable vulcanizer. Perfect adhesion without use of cement.

## STOP THAT LEAK

Tread cuts and surface injuries admit moisture and sand into the fabric to rot and weaken it, causing blow-outs and short mileage. —Sell Adamsons to repair such injuries in a few minutes time, while the tire remains on the wheel.

Practically every motorist wants an outfit to vulcanize his own tube punctures and blow-outs.—Sell him the dependable Adamson to make quick and lasting repairs—at home or on the road—without the use of cement.

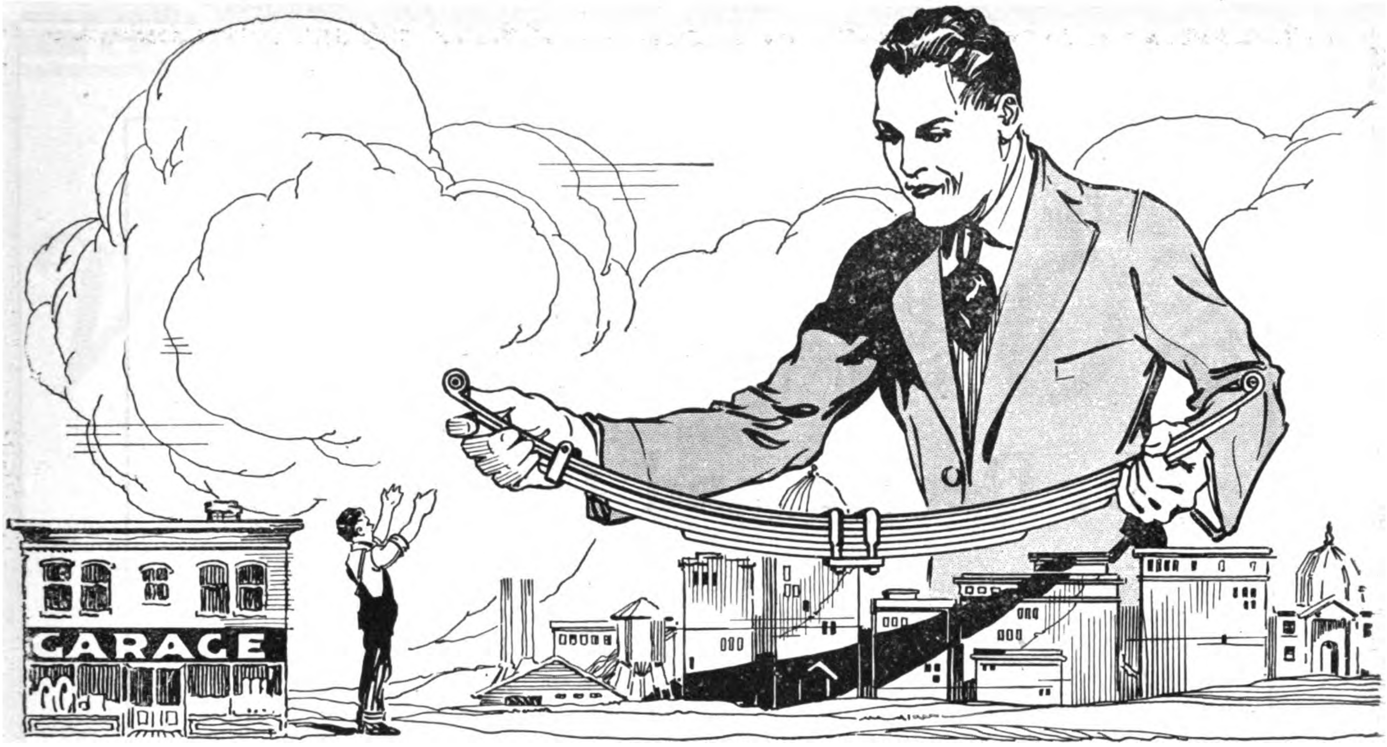
For quick sales and no dead stock carry Adamson Vulcanizers and Repair Gum.

Sold by all Jobbers

ADAMSON MANUFACTURING CO.

EAST PALESTINE, OHIO.

We also make Adamson Ford Brake Shoes, Lined and Unlined.



# There's a Harvey Jobber Near You

THE superiority of Harvey Springs has been so well proven by actual experience that there is no longer any question in the minds of garagemen and car owners as to their pre-eminence in strength, resiliency, endurance and all 'round dependability.

**Service — Founded on Quality**

Having built a Spring of such well established merit, a Spring that has won the respect and support of the entire motor world, it was for Harvey thoroughness to back up this Spring with a service as good as the Spring itself.

**Over 900 Styles Always in Stock**

In every state in the Union, there is a Harvey Jobber with a large stock of Harvey Springs always on hand. It is his business to see to it that your order is filled and shipped by the fastest route whenever you call on him for help.

THERE'S A HARVEY JOBBER NEAR YOU—Drop us a card and we will send you his name and our Spring Book giving measurements, weights, and sizes of over 900 different styles of Springs and other valuable information that you should have. Write today—you may need Harvey Help tomorrow.

**Harvey Spring & Forging Co.**

**915 17th Street** **Racine, Wis.**

*"You don't have to buy from us, but you will"*

MACO
MOTOR ACCESSORIES CORPORATION

# Mr. Dealer and Garageman

If you assure the Automobile owner, throughout the country, that he can purchase all of his accessories through a well-organized chain of retail stores and that he will receive uniform quality and product without substitution or delay, he will become a customer of yours.

Retail chain-store corporations, as you know, are successful in every line.

Our business is the Automobile Accessory Business and is founded upon and governed by the methods which have been successfully employed in other industrial lines. These methods protect those who become one of us and elevate the motor accessory field to a plane approaching perfection, finally resulting in satisfied dealers and consumers.

***Our Policy is***

## Economy, Efficiency and Better Service

If you want to know what is necessary to become one of us—

If you want to know what you have to do to become one of us—

If you want to know why it will pay you to become one of us—

If you want to know what we do for you when you become one of us—

If you want to know how we increase your business—

If you want to know how and why our name will become a home-word to the motorists throughout the country—

If you are the man with enough foresight to grasp an opportunity and take advantage of it when it is presented to you—

***Write Us for Further Information***

## MOTOR ACCESSORIES CORPORATION

***H. J. Curtis, Genl. Mgr.*** **170 Broadway, New York**

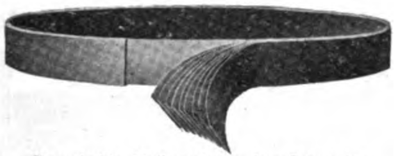
*"You don't have to buy from us, but you will"*

# GATES VULCO-CORD BELTS

*"The Standardized Fan Belt"*

# *Why only 50%?*

**Ten Ply, Endless**
**No Splice**



*Patented in U. S. and Foreign Countries*

Every car here listed takes a standardized Vulco, Cord Belt.

| | Stock No. | Cars and Models |
|---|---|---|
| 811 | 1911-16 | Ford Model T |
| 812 | 1917-18 | Ford Model T |
| 822 | 1916-17-18 | Hudson Super "6" |
| | 1918 | Moon Model 636 |
| | 1917-18 | National "6" |
| | 1916-17-18 | Saxon "6" |
| | 1915 | Overland Model 80 & 81 |
| | 1916 | Overland Model 83 |
| | 1917-18 | Overland "4" & "6" Model 85 |
| | 1916 | Willys Knight Model 84 |
| 824 | 1917-18 | Briscoe Model 424 |
| | 1915-16-17 | Dort Models 4, 5, 5A, 9, 6, 9S, 9T. |
| | 1918 | Dort Models 8, 11, 11S, 11T, 8C |
| | 1915 | Grant Model T |
| | 1916 | Grant Model V |
| | 1917-18 | Hollier Six |
| 831 | 1918 | Auburn (with Continental Motor) |
| | 1916 | Buick Models C24, C25 |
| | 1915-16 | Dodge |
| | 1916-17-18 | Empire Models 45, 50, 51 |
| | 1916-17-18 | Paige "6-38" & "6-39" |
| | 1916-17-18 | Studebaker "4" & "6" |
| | 1916-17 | Velie "6" |
| 832 | 1913 | Buick Models 30 & 31 |
| | 1916-17 | Buick Models D34, D35, D44, D45, D46, D47 |
| | 1918 | Buick Models E34, E35, E44, E45, E46, E47, E49, E50 |
| 834 | 1916-17 | Maxwell Model 25 |
| 835 | 1915-18 | Allen Models 34, 37, 41 |
| | 1915 | Buick Model D26, D37 |
| | 1916-17 | Buick Model D54, D55, D4 (G. M. C. Truck) |
| | 1916-17-18 | Chandler Models 17, 18 |
| | 1917-18 | Dodge |
| 837 | 1918 | Maxwell Model 25 |
| 841 | 1915 | King Model D |
| | 1916 | King Model E |
| | 1917-18 | King Model EE, seven-passenger |

You are not getting more than 50% of the fan belt business that belongs to you unless you sell a *standardized* belt.

Standardization is the secret of more belt business for the dealer; here is the reason.

There are today 184 well-known makes and models of cars on the market, and it has been impossible for a dealer to carry belts to fit more than half a dozen of this number.

Hundreds of customers have been turned away because their cars could not be fitted. This business the dealer is losing. You can now get it.

By co-operating with the car manufacturers, the Vulco-Cord has been standardized. *Less than a dozen* different standardized sizes will fit more than 85% of all the cars in use.

Vulco-Cord Belts are made according to the car builders' specifications—built like a cord tire—ten ply —endless—tested to 1,000 pounds. They will outlast three ordinary belts; and are sold under an unqualified guarantee to the customer.

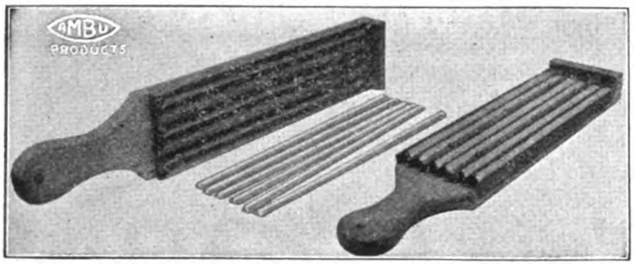
If you are a car agent you will find a standardized Vulco-Cord Belt to fit your car, no matter what it is. You will be entitled to the benefit of quantity prices on your requirements.

Over one million standardized Vulco-Cord Belts are now in use. You should get your share of this business. Your jobber has them.

GATES VULCO CORD BELTS
*"The Standardized Fan Belt"*

***Made only by***

## The Colorado Tire & Leather Company, Denver



**AMBU BURNING LEAD MOLD**
**For Moulding Scrap and other Lead into Molds for making Burning Lead**

# Battery Repair Appliances

## AMBU

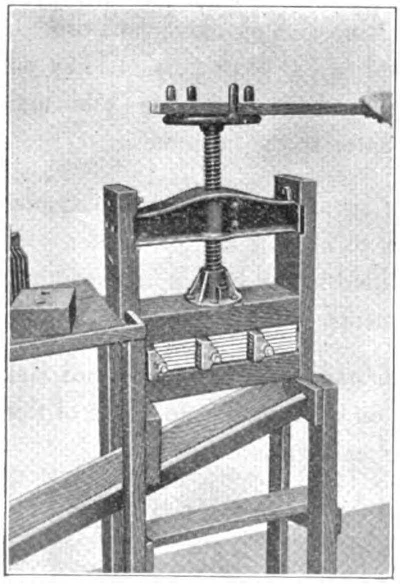
WITH these labor saving devices as a part of your shop equipment you are enabled to care for all the battery repair work in your section. These practical appliances have proven indespensable to the repair man and promise to become equally as popular as our famous AMBU **Trouble Shooter.**

Bearing the well known AMBU trade mark stamps these appliances as not only highly efficient, but they have back of them the company which has done so much for electric starting and lighting repairs through the distribution of AMBU.

There is a lot of money to be made in battery repairs, *but* the proper tools are *necessary*. AMBU BATTERY REPAIR APPLIANCES furnish the equipment necessary to do first-class work. With them you can handle all phases of this work with least expense of time and labor. *Being time and labor savers—they are money makers.*

AMBU PRODUCTS

AMBU BATTERY TURN TABLE
**Saves lifting the heavy battery when making repairs**



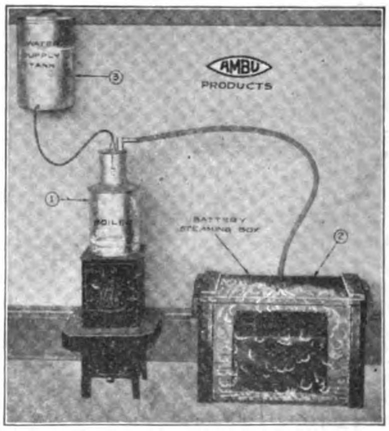
AMBU PLATE PRESS
**Complete with Transite Boards**

There is a crying need for each of these appliances in every shop pretending to handle Battery repairs. The cost is small compared to their money making possibilities.

Send for catalogue minutely describing each of the tools pictured herewith.

### *JOBBERS*

***The distribution of this original line is a valuable concession. We urge you to make your plans NOW for the demand we shall create through our advertising and salesmen.***



AMBU BATTERY STEAMER
**For softening sealing compound on Starting and Lighting Batteries**

***For complete information address***

**AMERICAN BUREAU OF ENGINEERING, Inc.**
**Battery Shop Department**
SOLE MANUFACTURERS AND DISTRIBUTORS
**1032 So. Wabash Avenue, Chicago, Ill., U. S. A.**

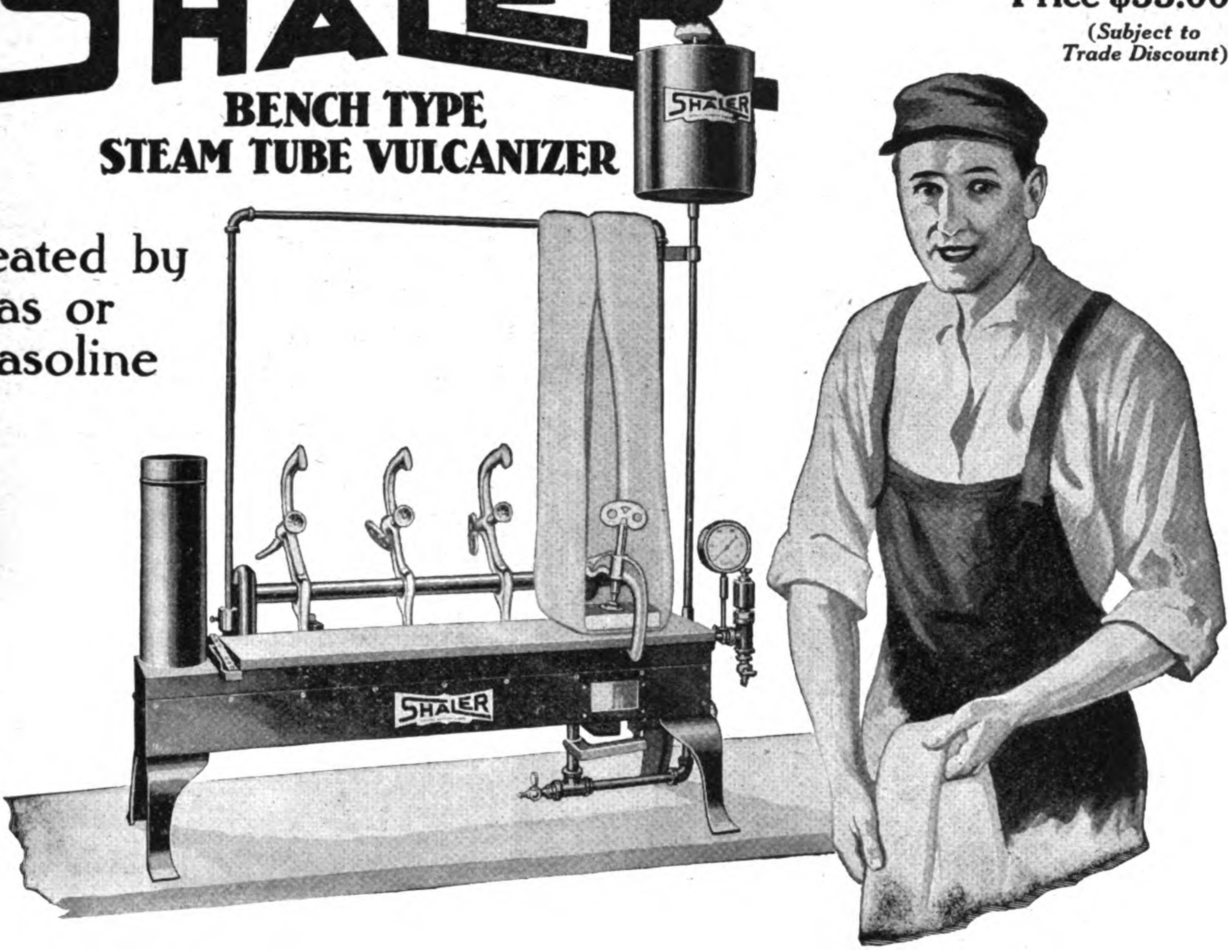
**Makers of AMBU Electric Trouble Shooter**

# SHALER

## BENCH TYPE
## STEAM TUBE VULCANIZER

Type "L-40"
Price $35.00
*(Subject to Trade Discount)*

Heated by
Gas or
Gasoline



# Will Pay for Itself in a Week

This SHALER Tube Vulcanizer is the most popular vulcanizer ever put on the market. Thousands of them are in use in Garages and Repair Shops, and many of them have more than paid for themselves the *very first day* they were used!

You can do every kind of tube repairing with this vulcanizer, just as well as with the most expensive machines costing many times as much.

It repairs four tubes *at one time*—and vulcanizes perfectly any size or shape of puncture or cut up to two feet in length. There is no vulcanizer made that will turn out better work or do it more quickly—why think of paying a big price for a vulcanizer that will do no more than this practical SHALER Tube Vulcanizer!

## Easy to Operate—Automatic Heat Control—SAFE!

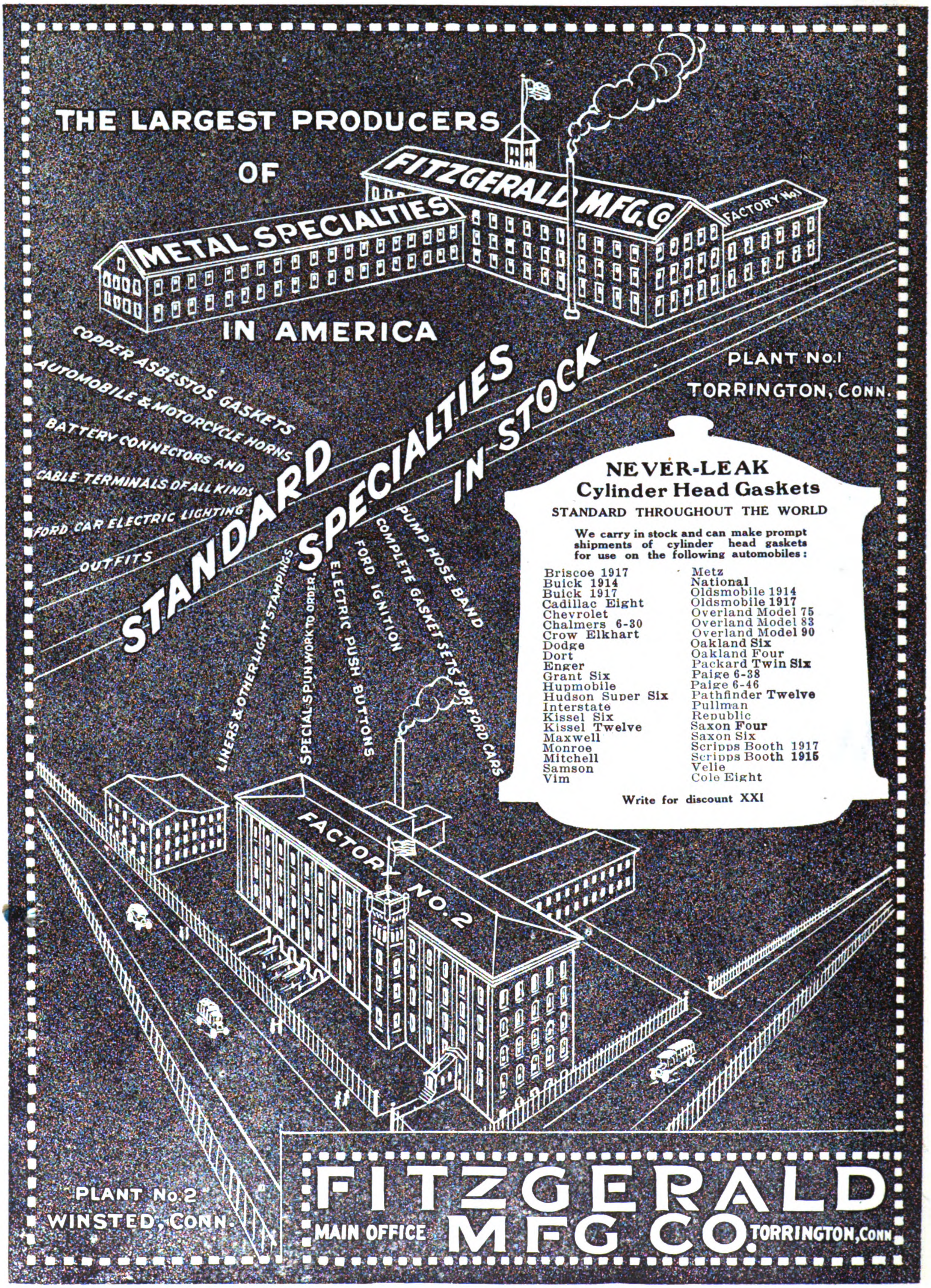
Even a boy can make perfect repairs with this vulcanizer. You don't need experience. Your ordinary garage help can repair any size or kind of inner tube—and make a perfect job of it.

The SHALER Vulcanizer is the only one that has automatic heat control. Requires no watching or regulating, yet there is no danger of overheating tubes or undercuring the rubber. Takes up very little room in your garage or repair shop—it can be placed on any work bench and moved about at will. This vulcanizer uses little fuel—is furnished with either gas or gasoline burner—or both can be had if desired.

### *All Jobbers Sell This Popular Outfit*

**Ask your jobber now for complete information about SHALER Bench Tube Vulcanizers—or send to us for the new SHALER Catalog of Shop Vulcanizers. Investigate—but do it NOW!**

**C. A. Shaler Company, 252 Fourth Street, Waupun, Wisconsin**
***Oldest and Largest Manufacturers of Vulcanizers***



THE LARGEST PRODUCERS OF METAL SPECIALTIES IN AMERICA

PLANT No. 1
TORRINGTON, CONN.

STANDARD SPECIALTIES IN STOCK

- COPPER ASBESTOS GASKETS
- AUTOMOBILE & MOTORCYCLE HORNS
- BATTERY CONNECTORS AND CABLE TERMINALS OF ALL KINDS
- FORD CAR ELECTRIC LIGHTING OUTFITS
- LINERS & OTHER LIGHT STAMPINGS
- SPECIAL SPUN WORK TO ORDER.
- ELECTRIC PUSH BUTTONS
- FORD IGNITION
- COMPLETE GASKET SETS FOR FORD CARS
- PUMP HOSE BAND

## NEVER-LEAK
## Cylinder Head Gaskets

STANDARD THROUGHOUT THE WORLD

**We carry in stock and can make prompt shipments of cylinder head gaskets for use on the following automobiles:**

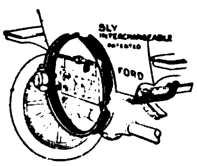
Briscoe 1917
Buick 1914
Buick 1917
Cadillac Eight
Chevrolet
Chalmers 6-30
Crow Elkhart
Dodge
Dort
Enger
Grant Six
Hupmobile
Hudson Super Six
Interstate
Kissel Six
Kissel Twelve
Maxwell
Monroe
Mitchell
Samson
Vim
Metz
National
Oldsmobile 1914
Oldsmobile 1917
Overland Model 75
Overland Model 83
Overland Model 90
Oakland Six
Oakland Four
Packard Twin Six
Paige 6-38
Paige 6-46
Pathfinder Twelve
Pullman
Republic
Saxon Four
Saxon Six
Scripps Booth 1917
Scripps Booth 1915
Velie
Cole Eight

Write for discount XXI

PLANT No. 2
WINSTED, CONN.

**FITZGERALD MFG. CO.**
MAIN OFFICE TORRINGTON, CONN.

# NEW ERA AGAIN PUTS OVER A WINNER



New Era
BETTER
SPRINGS

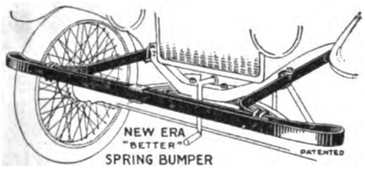
Following the success of New Era "Better" Springs for replacement which STOP THE BREAKAGE and have been catalogued by more jobbers than all others combined. And New Era "Better" Tire Carriers which outsold all others last year and the year before and are repeating with a vengeance this year. It was to be expected that

## New Era "Better" Spring Bumpers

Would receive the support of most of the best jobbers of the country right from the start. What appealed to them was the interchangeability feature and our guarantee which meant to them and their customers,

*NO MORE DEAD BUMPER STOCKS*
*FREE EXCHANGE OF DETACHABLE ARMS*

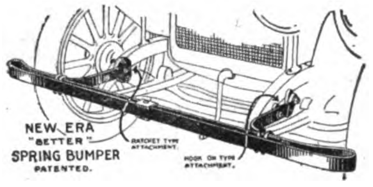
# BETTER BUMPER BUSINESS



Front Bumper—For All Cars

LIGHTER
NEATER
STRONGER

***No Higher Price for Big Cars***

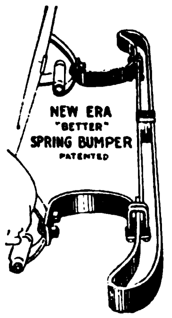


Ford Front Bumper

A positive evolution in Spring-Steel Bumper (now acknowledged to be the only practical kind). A drum-like rebound is secured in our patented double bar tied in center to make both act simultaneously.

**INTERCHANGEABILITY**—Ninety per cent. of previous stocking troubles eliminated by the New Era patented construction of **all bars being the same** for every make of car, and ninety-three per cent. of cars will take either the patented Ratchet or Hook-On attaching arms.

**FREEDOM FROM DAMAGE**—Main bars being highly tempered spring steel and the short detachable attaching arms only semi-tempered, these will bend if any severe shock is received, causing but little if any damage, and are replaced free.



Rear Bumper

**LIGHT, STRONG and NEAT**—1¾x5/16-inch spring steel is used and the construction is such that bumper made of this size steel has greater resisting power and absorbing quality than bumpers of other construction made of steel wider and thicker. Not a truck bumper

**CONSTRUCTION**—Double front bar full length with center tie giving maximum strength from end to end—no weak points in whole length. When angle blow is received vibration is distributed and absorbed throughout entire length of bumper and attaching arms.

**FINISH**—New Era "Better" Spring Bumpers are furnished in **Black** and **Black with Nickel front bar**. Highest quality nickel plating on Duplex Copper.

**PRICES**

| | Black | Nickel |
|---|---|---|
| Standard | $10.00 | $11.50 |
| Ford Front | 9.00 | 10.50 |
| Ford Rear | 9.50 | 11.00 |
| Chevrolet | 9.00 | 10.50 |
| Special Cars, Stock List | 11.00 | 13.00 |
| Made to Order | 12.50 | 14.50 |

GUARANTEE

On return, express prepaid to us (not to Dealer or Jobber) of any damaged or defective part of this Bumper, we will replace same without charge.

New Era Spring & Specialty Co.
Grand Rapids, Mich.

Tag Attached to Every Bumper

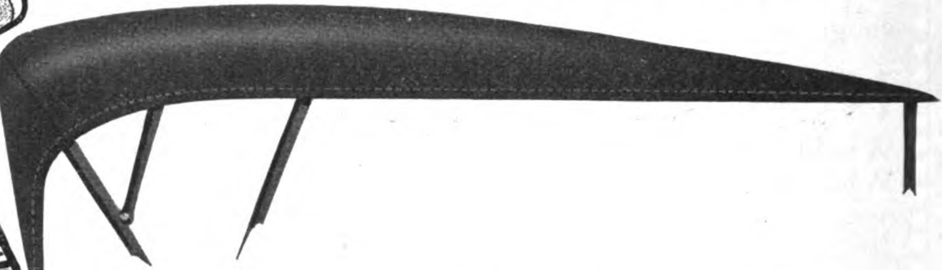
**Through Your Jobber or Wire Rush Orders to Us Collect.**

*Write for Complete Catalogue of New Era "Better" Accessories*

## NEW ERA SPRING AND SPECIALTY CO.

**1177 Hamilton Avenue** **GRAND RAPIDS, MICH.**

# AS EASY TO PUT ON AS A COAT



# BADGER

## SLIP ROOF OUTFITS

*Every* motorist's final answer to the top problem. Only one thing to decide *now—"Does the old car need a new top?"* If it does, a Badger Slip Roof outfit fills the bill—every way—without having to consider the "bill" of costs.

"Easy to put on as a coat." No trouble. No experience. No skilled labor. Any one who can pull and drive a tack—can do the work in an hour and a half—*easy*. Simply take off old top—tack on new. That's all. Badger Slip Roof Outfits come all ready to put on—even the tacks are supplied. No measuring. No trimming. No misfits. Correctly patterned from original tops furnished by car manufacturers. Guaranteed perfect fit. Highest grade materials—*regular Badger Quality*. Strongly sewed—no ripping out. Perfectly finished in every detail.

Offered at half ordinary new top prices.

*For practically all popular makes of cars*—Buick, Dodge, Cadillac, Maxwell, Ford, Overland, Studebaker and many others.

*Put on quickest. Stay on longest. Save most.*

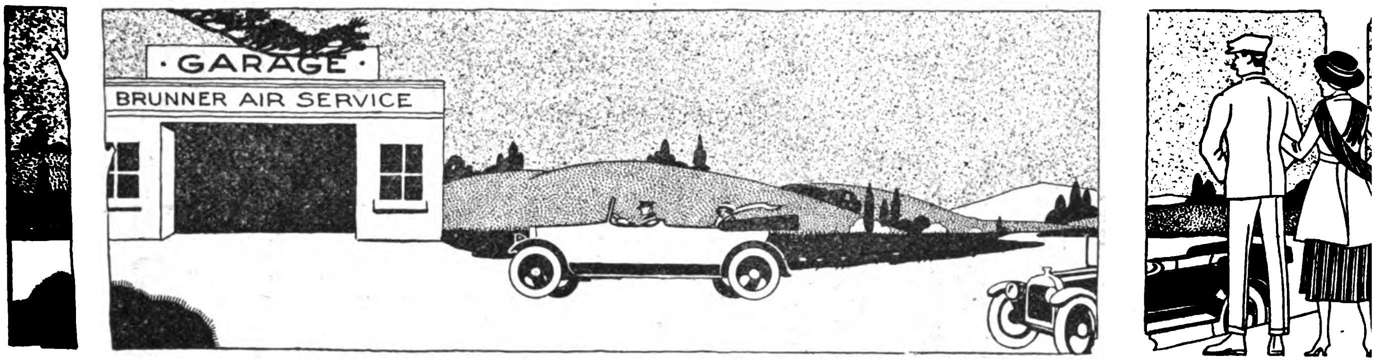
## *BACK CURTAINS*

Made the "Badger Way"—high grade materials—high class workmanship—equipped with Johnston Beveled Plate Glass Curtain Windows—for nearly all makes of cars. A money maker for *any* dealer.

DEALERS:—It's an exceptionally good selling proposition. Quick, big, profitable cash returns. To miss it means money lost. Write now for catalogue and trade discounts.

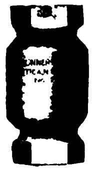
**WISCONSIN AUTO TOP CO.**
**RACINE, WISCONSIN**

**PERFECT FIT-HALF USUAL COST**

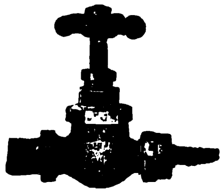


## *In the Garage Business Today Reputations Are Built on Service and the Very Foundation of Garage Service is a Dependable Air Compressor*

## INVESTIGATE THE BRUNNER AIR COMPRESSOR



Garagemen who investigate the air compressor field thoroughly before placing their order, invariably select the Brunner because they find a predominance of Brunner Air Compressors in the successful neighboring garages and the users always gladly recommend the Brunner because it has rendered high class service, which has helped them in building up their reputation. Years of dependable and efficient service in the garage have gained for the Brunner Air Compressor an enviable reputation, which is being maintained by the continued dependability of Brunner Compressed Air Service.



## Dependable Compressed Air Tanks and Fittings Are Just as Necessary as an Efficient Air Compressor

A leaky needle valve, check valve, tank or air hose will reduce the efficiency and life of a good air compressor and add to the operating cost—and an improperly constructed air tank, an inaccurate air gauge or an unreliable safety valve will render a compressed air plant absolutely dangerous.

**Brunner Compressed Air Tanks and Fittings Are Both Safe and Reliable and Will Permanently Increase the Efficiency of Any Imperfect Installation**

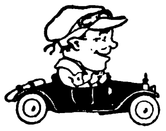
A length of Brunner "Resistoil" Air Hose would noticeably reduce this item of upkeep and convince any garageman that it will outwear two or more lengths of ordinary air hose.

***Our new No. 15 Catalogue is the most complete and comprehensive book of its kind ever published. We will be glad to send you the catalogue and the name of the Brunner Jobber who covers your territory.***

## BRUNNER MANUFACTURING COMPANY

**Main Office and Plant:**
**UTICA, N. Y.**

**Cincinnati Branch:**
**CINCINNATI, OHIO**



*"The Motorist Who is Brunnerwise—Knows Brunner Service Satisfies."*

# You Can Make

$1000
Profits

# This Summer

## Firestone Ford Circulator

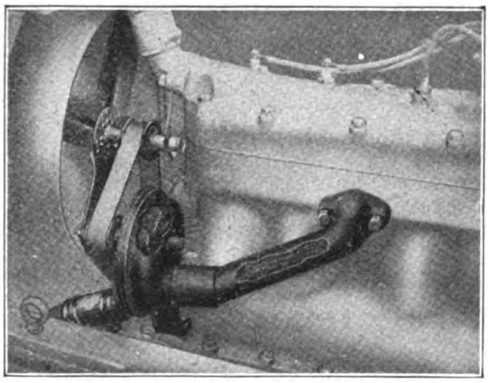
"A NECESSITY FOR THE FORD CAR"

**The First Centrifugal Water Circulator**

Built for Ford cars, tractors or trucks. Places the Ford among high-class cars.

We guarantee this Centrifugal Circulator to keep the motor so cool that you can lay your hand on the radiator after running several hours idle.

THIS CIRCULATOR SAVES THE SMALL PRICE OF IT IN LUBRICATING OIL ALONE, as you find a cool motor uses less oil, and less carbon is formed because heat creates carbon in the firing chamber.



Firestone Water Circulator on Ford

ELIMINATE the pounding from your motor, as a hot motor develops heat knocks on sandy roads, hill climbing or a heavy pull. Easy to install on any Ford.

**PRICE COMPLETE**
**New belt and bolts ready to install**
**$9.00 F. O. B. Chicago, Ill.**

**FIRESTONE SALES COMPANY**
**1806 Michigan Ave. Chicago, Ill.**

# MR. DEALER

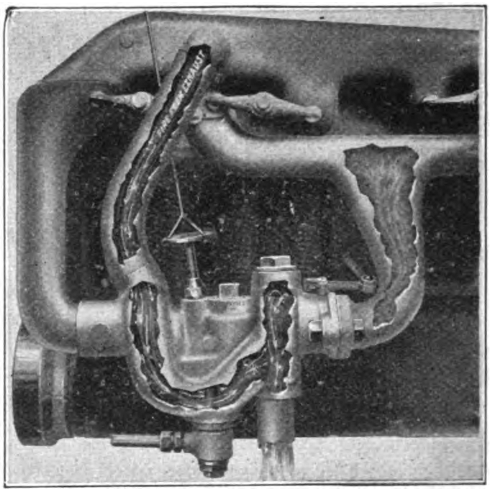
**The Most Satisfactory Kerosene Burner For Fords**

# GILSON-FIRESTONE CARBURETOR

**THE MASTER OF ALL FUEL**

**The Gilson-Firestone Carburetor burns kerosene better than any other carburetor burns gasoline.**

**When purchasing a carburetor get one that will burn kerosene (coal oil), distillate or gasoline without any readjustments.**

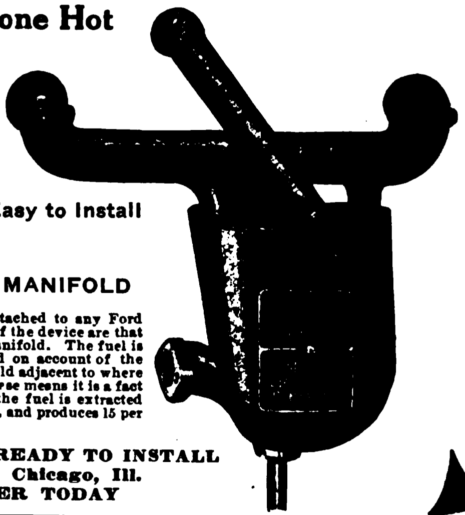


## 31 Miles Per Gallon

PRICE COMPLETE, READY TO INSTALL

| | |
|---|---|
| Carburetor for Gasoline only | $18.00 |
| Carburetor for Kerosene (coal oil) including extra tank and water circulator | $30.00 |

## The New Firestone Hot Manifold for Fords



**For all Ford cars, tractors or trucks. 15% more power— 25% less gasoline—Easy to Install —Fully Guaranteed.**

**THE FIRESTONE MANIFOLD**

is a complete unit and may be attached to any Ford car. The emphasized features of the device are that the heat is around the inlet manifold. The fuel is vaporized in the inner manifold on account of the heat being applied to the manifold adjacent to where the fuel tends to collect. By these means it is a fact that every ounce of power in the fuel is extracted and turned into useful energy, and produces 15 per cent. more power.

**PRICE COMPLETE, READY TO INSTALL**
**$7.50 F. O. B. Chicago, Ill.**
**SEND ORDER TODAY**

FIRESTONE SALES COMPANY, Date....................
1806 Michigan Ave., Chicago, Ill.

Find enclosed $.........., for which ship me the following:

...............................................................................

I will install on Ford, and if the device does not meet all the claims you make for it, you will refund purchase price—I can use device 30 days FREE.

☐ Send me your complete line and dealers' discount.

☐ Please send me your agency plan.

Check information desired.

Name....................................

Street Address..........................

City....................State............

(When Writing to Advertisers, Please Mention the Accessory and Garage Journal.)

The ACCESSORY and GARAGE JOURNAL
Devoted Exclusively to the Automobile Trade and Allied Interests.

VOL. VII. PAWTUCKET, R. I., APRIL, 1918 No. 12

# Further Cut In the Production Of Cars

### War Industries Board and Fuel Administration Plan Another Curtailment.

The War Industries Board and the Fuel Administration have agreed upon plans to restrict the manufacture of automobiles to approximately 50 per cent. of the normal output, and it is probable that announcement will be made soon containing the details of the curtailment program to be put into effect.

Under an agreement with the manufacturers, entered into voluntarily, the output already has been reduced to 30 per cent. The new rules, if adopted, will mean an additional curtailment of 20 per cent.

Representatives of several of the big automobile concerns were in Washington and conferred with representatives of the War Industries Board, but the final decision was deferred and it is probable that further conferences will be held.

The question of cutting down the manufacture of passenger cars has been under discussion for some time, as industries considered more vital to the war have made heavy demands for chrome and manganese, which are necessary to the hardening of steel plates. The automobile industries use large quantities of these materials. Many thousands of skilled workmen who were essential to government war work, such as the aircraft program and ordnance work, are being employed in automobile factories, and it is also planned to use a larger number of these men in war work.

The general plan will be to use the portions of automobile factories which are released by the curtailment program for war work and it is believed that this can be done without serious loss of working time or the disturbance of labor.

The curtailment will not affect seriously the portions of plants used in the construction of motor trucks which may be used for war work.

It had not been expected in the automobile industry that any curtailment in production of cars for 1918 would be as high as 50 per cent. of the 1917 schedules. There were 1,719,000 cars counting all kinds, built last year.

When the automobile industry volunteered recently to cut its production 30 per cent., it was to save coal. The offer was made to the Fuel Administrator, who asked suggestions as to how the motor car industry might help. The automobile industry soon will be able to replace a large number of the men laborers who are drafted into government work with women. Many women are now employed in various ways in motor car plants and their field of work will be broadened, so that they can do mechanical work here as they have long been doing in England.

In Europe the production of passenger cars has practically ceased with the exception of the Fiat company at Turin, Italy. England only produced four passenger cars last year, while France did not manufacture any.

# Racing Will Open at Sheepshead Speedway

### Harkness Handicap at 100 Miles Will Head Program at Big Oval on Memorial Day.

The motor car racing season will open on Memorial Day at Sheepshead Bay Oval, Long Island, with a program that promises to be as interesting as any that were staged last year, as in addition to the many star drivers, Dario Resta, the speed king of 1915-16, has announced his intention of entering the field again and will participate in the leading events.

The Harkness handicap at 100 miles will be the outstanding feature of the racing carnival at the Sheepshead Speedway. Many of the world's greatest drivers will compete in this race, as well as in the other events on the program.

Harry S. Harkness, the millionaire sportsman and owner of the speedway, for whom the handicap is named, will be the donor of a costly trophy, while Promoter W. H. Wellman will hang up a record breaking purse. In addition to the automobile events on May 30 there will be a series of aerial exhibitions by aviators, both men and women. The Memorial Day meet will be the first in which the members of the Sheepshead Speedway Motor Club, Inc., will participate. A members' race is planned by President Wellman.

# Another Advance in Pneumatic Tires

### Leading Companies Manufacturing Tires Have Put Into Effect Higher Schedules on Tubes and Casings.

There has been a general advance in tire prices, which action on the part of the manufacturers was expected and foreshadowed by a number of developments affecting the supplies of material that enter the construction of pneumatic tires. It has been known for some time that another increase in tire prices would have to be made to meet the rising costs of cotton fabrics and labor, but now even a shortage of crude rubber is in prospect through the decision of the shipping board to put into effect a reduction of approximately 50 per cent. in rubber imports as a means of conserving the cargo space for war needs.

The Michelin Tire Co. has increased the prices of inner tubes and 3, 3½ and 4-inch tires 10 per cent., and 4½ and 5-inch tires five per cent.

The Ajax Rubber Co. has increased all prices 10 per cent.

The Fisk Rubber Co. has increased the prices of all tires and tubes 10 per cent.

The Republic Rubber Co. has increased the prices of automobile and truck tires and inner tubes 10 per cent.

The United States Tire Co. has increased the price of all automobile tires and tubes 10 per cent. with the exception of Nobby Tread tires, which remain the same. Pneumatic truck tires have also been increased 10 per cent. No advance has been announced on solid truck tires.

The Goodyear Tire and Rubber Co. has advanced all prices 10 per cent., effective immediately.

The B. F. Goodrich Co. has advanced all prices 10 per cent.

The Miller Rubber Co. will increase all prices 10 per cent. on May 1.

The Firestone Tire and Rubber Co. has advanced the prices on non-skid and fabric tires from 12 to 15 per cent. and on plain tread tires and inner tubes 10 per cent.

# *National Automobile Dealers Association*

## A New Organization of Motor Car Distributors Throughout the Country to Protect and Conserve Interests of Dealer

The National Automobile Dealers Association is an organization originally comprising a membership of local associations only, but now accepting individual memberships from any established dealer in automobiles.

Its original memberships consisted of automobile dealers' organizations from 16 states, comprising a group of the largest sellers of automobiles in the world, representing practically every automobile now manufactured.

**F. W. A. Vesper of St. Louis, President of the N. A. D. A.**

Included in the list of its first membership under its first charter were the organizations representing the largest automobile distributing centres in the United States, both in prominence and in volume of cars distributed, prominent among which are: ”

- **Chicago Auto Trade Association.**
- **Philadelphia Auto Trade Association.**
- **Boston Auto Dealers Association.**
- **St. Louis Auto Manufacturers and Dealers Association.**
- **Cleveland Auto Show Company.**
- **Kansas City Motor Car Dealers Association.**
- **Minneapolis Auto Trade Association.**
- **Motor Car Dealers Association of Los Angeles.**
- **Louisville Auto Dealers Association.**
- **Atlanta Auto Dealers Association.**
- **Milwaukee Automobile Dealers Association.**
- **Rocky Mountain Auto Trades Association.**
- **Des Moines Auto Trade Association.**
- **Worcester Auto Dealers Association.**
- **Albany Auto Dealers Association.**
- **Oklahoma City Motor Car Dealers Association.**
- **Dallas Auto Dealers Association.**
- **Brown County Auto Trades Association.**

It represents in its personnel the progressive, alert, active automobile dealer who is beyond mere selfish personal interest and who has the welfare of this entire industry at heart, and who believes in any constructive movement that will upbuild the same.

### *OFFICERS*

President,
**F. W. A. Vesper,**
Director St. Louis Auto Manufacturers and Dealers Association.
First Vice President,
**John H. Mac Alman,**
President Boston Automobile Dealers Association, Inc.
Second Vice President,
**Prince Wells,**
Louisville Automobile Dealers Association.
Treasurer,
**Thomas J. Hay,**
Chicago Automobile Trade Association.
**Secretary,**
**Bart J. Ruddle,**
316 Germania Bldg., Milwaukee, Wis.

### *DIRECTORS*

**John H. Johnson,**
Boston Automobile Dealers Association, Inc.
**Geo. D. McCutcheon,**
Atlanta Automobile Dealers Association.
**P. E. Chamberlain,**
Rocky Mountain Auto Trades Association, Denver, Col.
**P. H. Greer,**
Motor Car Dealers Association of Los Angeles.
**A. E. Maltby,**
Philadelphia Automobile Trade Association.
**J. A. Graham,**
Minneapolis Automobile Trade Association.
**C. A. Forster,**
Cleveland Automobile Dealers Association.
**Dean Schooler,**
Des Moines Automobile Dealers Association.
**Geo. W. Browne,**
Milwaukee Automobile Dealers, Inc.

Its board of directors is composed of aggressively interested automobile dealers and distributors ready to sacrifice their time and influence for the benefit of the selling branch of the industry.

In short, the National Automobile Dealers Association is a federation of progressive automobile dealers, behind which stands the foremost dealers associations, and a majority of the largest organizations engaged in the selling of automobiles in the United States.

It has grown from a mere thought to a powerful reality since its organization, and merits your active interest and support.

The preliminary organization of the National Automobile Dealers Association took an active part in the campaign before the finance committee of the United States Senate, which resulted in the reduction of the war tax on automobiles from five per cent. to three per cent. Its work in behalf of the industry, as a whole, during this compaign has been warmly commended by the National Automobile Chamber of Commerce.

**John H. MacAlman of Boston, First Vice President of N. A. D. A.**

The National Automobile Dealers Association has supported the National Automobile Chamber of Commerce in all its efforts to modify the attitude of official Washington towards the automobile industry.

The National Automobile Dealers Association is furthering the movement for a War Service Committee to cooperate with the Commercial Economy Board of the Council of National Defense, which will represent and work for the automobile dealers of the United States without reference to their affiliation.

The National Automobile Dealers Association will cooperate with the National Automobile Chamber of Commerce in all matters of mutual interest to the automobile dealers and manufacturers, which will render substantial service to the industry as a whole.

The National Automobile Dealers Association officials have in two cases appeared before state executives on important legislative matters of interest to the trade, bringing about satisfactory adjustment of same, after representatives of local dealers had failed to get a hearing.

It has already called attention of proper boards to the injustice and detriment represented in the order against shipping of road materials, believing that permanent highways offer the greatest solution for the relief of the transportation problem, and that the building of highways should be speeded up instead of retarded.

It has been and will continue to be active in assisting in finding a solution to the shipping situation, which is probably the most serious thing now confronting the dealer in automobiles.

It has been and always will be found active in everything that is good for the industry, and against anything that may be detrimental.

The National Automobile Dealers Association proposes to have a representative to act for the automobile dealers of the United States at the National capitol and all state capitols in matters of legislation of interest to the automobile industry.

To protect and conserve the rights and interests of the automobile dealer wherever and whenever necessary.

To maintain a legislative committee with powers to act in support of beneficial legislation and authority to oppose detrimental legislation in Congress and the state legislatures.

To encourage and assist in the establishment and maintenance of improved highways, roads and street, and of just laws regulating the safe and proper use of the same.

To collect, classify and keep on hand for reference and for distribution among its members and others, information, data and statistics regarding approved methods of road building and road maintenance and of laws regulating the use of public roads and highways.

To afford opportunity to members of associating and interchanging views with each other, and of taking such concerted action as may be desirable looking towards the betterment of trade conditions generally in the automobile business.

The National Association proposes to bring about the coordination of all conflicting state laws pertaining to the automobile industry, and will establish at each state capital a representative who will keep the board of directors informed upon impending legislation of a drastic or prejudicial character.

It will urge those in control of the railroads of the country to provide the transportation facilities necessary for the proper delivery of automobiles to all sections of the country, thus insuring a dealer relief from a most serious handicap to the successful conduct of his business.

There are 48 state legislative bodies and one national legislative body making laws, and their combined output is not far from 15,000 statutes annually, a great many of which pertain to the automobile industry. Therefore, vigilance is necessary to prevent unfair or detrimental statutes from becoming laws.

It is almost impossible to correct unfavorable legislation once it becomes a law, and it is therefore necessary to furnish proper information that will prevent the adoption of unfavorable legislation in order that the automobile business can preserve and maintain a position equal to other industrial bodies in the world of trade.

In short, the national association is an organization of automobile dealers who are banded together for the purpose of protection of their business and the upbuilding of an industry which has for its foundation the world's greatest asset—transportation.

The value of the National Automobile Dealers Association to its members and the trade in general was illustrated recently when the board of directors applied all its energy to remedy one of the most perplexing situations that has confronted the selling branch of the industry since the beginning of the war.

Pennsylvania state and local authorities entered into conflict with the ruling of the director general of railroads in connection with the order that automobiles be driven from factories to dealers' destinations. A fleet of 50 Oldsmobiles being driven from the factory at Lansing, Mich., to the Philadelphia and New York City distributors was held up at York, Pa., for two days while licenses were secured in compliance with the state law, and the Philadelphia and New York distributors were compelled to pay $720 to cover the expenses of 50 drivers during the hold up and before being allowed to proceed to their destination.

As soon as the facts were presented to the secretary's office and A. E. Maltby, director of the National Automobile Dealers' Association, at Philadelphia, a vigorous protest was entered with Governor Martin G. Brumbaugh of the State of Pennsylvania, E. A. Hugentungler, mayor of York, Pa., where the hold up took place, and J. D. O'Neil, Pennsylvania state highway commissioner, and others.

An appeal for protection while carrying out the embargo orders issued from Washington was forwarded to director general of railroads, Wm. G. McAdoo, and chairman of the Council of National Defense, Bernard Baruch. The cooperation of Alfred Reeves, general manager of the National Automobile Chamber of Commerce, was also solicited and a general campaign to overcome the Pennsylvania situation was inaugurated.

## NORTHWESTERN CHEMICAL INCREASES CAPITAL STOCK.

At a recent meeting of the directors of the Northwestern Chemical Co., Marietta O., it was decided to increase the capital stock of $150,000 to $500,000.

The increase in capitalization was made to take care of the company's increasing business and to provide for the erection of two large new buildings, which are practically completed at this time. This is the fourth time in the past two years that the Northwestern has had to erect more buildings and provide additional space for manufacturing the well known line of Norwesco Utilities, sometimes known as the "Chemically Correct" line.

This company manufactures a complete line of chemical specialties. Some of the most prominent being a radiator cement, radiator cleaner, mohair and leather top dressings, carbon remover, cements, color varnishes, etc.

## *War Committee of the N. A. D. A.*

The Chamber of Commerce of the United States has indorsed the appointment of the following War Service Committee by the National Automobile Dealers' Association. This committee was appointed in pursuance to a request issued by the War Economy Board of the Council of National Defense and followed the meeting held in Washington between A. W. Shaw, chairman of the Economy Board, and a delegation of dealers from important distributing centres of the country.

Chairman, F. W. A. Vesper, St. Louis Auto Manufacturers and Dealers Association.

Earl C. Anthony, Motor Car Dealers Association of Los Angeles.

Chas. Collier, Brown County Auto Trades Association, Green Bay.

A. E. Mitzel, Ohio Auto Trades Association, Canton, O.

A. E. Maltby, Philadelphia Auto Trade Association.

F. E. Murphy, Minneapolis Auto Trade Association.

Geo. W. Browne, Milwaukee Auto Dealers, Inc.

Dayton Keith, Chicago Auto Trade Association.

J. H. MacAlman, Boston Auto Trade Association, Inc.

Geo. D. McCutcheon, Atlanta Automobile Association.

O. P. Tyler, Worcester Automobile Trade Association.

Fred J. Caley, Cleveland Auto Show Co.

Chas. M. Brown, New York Automobile Dealers Association.

F. L. MacFarland, Rocky Mountain Auto Trade Association.

Prince Wells, Louisville Auto Dealers Association.

Thomas J. Hay, Chicago Auto Trade Association.

Dean Schooler, Des Moines Auto Trade Association.

The president has appointed A. E. Maltby, president of the Philadelphia Automobile Trade Association, special Washington representative of the National Association, and has so notified H. F. Fowler, secretary of the War Service Executive Committee, Washington, D. C., and Alfred Reeves, manager of the National Automobile Chamber of Commerce.

Headquarters of the National Association in Washington, D. C., will be in the headquarters of the National Automobile Chamber of Commerce, 509 Seventh street, S. W. This arrangement will prevail until permanent headquarters are established there.

# *Y. M. C. A. Needs Drivers To Go Abroad*

### Men of High Caliber Wanted for Ambulance Work. Those Capable of Doing Repair Work Preferred.

HAVING satisfied all demands for automobile drivers for April, the National War Work Council of the Y. M. C. A. has issued an appeal for 75 men to go overseas in May for service with the American Expeditionary Forces and the French armies in the work intrusted by the United States and France to the association. As explained by W. O. Wilson, recruiting secretary for the Y. M. C. A. motor transport service, 347 Madison avenue, the special need at this time is for so-called "gentlemen drivers," men who own their own cars and know enough about their machinery to make minor repairs if necessary.

"While we desire as many volunteers as possible who can contribute their services," said Mr. Wilson, "we welcome the man of the highest type who cannot afford to go overseas at his own expense. The Y. M. C. A. is not in a position to pay high salaries, but men with dependents may enlist with the full knowledge that the Y. M. C. A. will do everything possible to relieve them of their responsibilities and obligations at home while they are in France.

"We want the highest grade of men, American business and professional men. Their duties will require unusual versatility. At one hour of the day they may be in conference with a division commander regarding questions of policy, and later they may be bossing a crew of men in the loading or unloading of the truck. Recruits for this service must be able to 'meet the colonel' on equal terms and at the same time direct the work of men in the most subordinate positions."

The motor transport service under the Red Triangle offers an opportunity for worth while service to men who are beyond military age. A man who is 50 years old, if he is in sound physical condition, can be utilized by the Y. M. C. A. where the military authorities would spurn him for service in the trenches. As an indication that the motor transport driver may find that his job is far from tame, Mr. Wilson says:

"In the last German drive every available Y. M. C. A. truck was turned into an ambulance and in many cases our trucks were the last to leave the fields and villages that were captured. A man who goes as a driver must be prepared for such service as this and after he has done it he will be satisfied that he is doing his bit equally with his younger brother who has gone over the top or is waiting for the order to advance.

"Of course such opportunities for courage under fire won't come to the recruits in this service every day. For the most part they will drive and take care of their own trucks, camions or scout cars. Mechanics have been enlisted to do the intricate repairing. But there is also the possibility for service in an emergency. Our drivers may be called upon to jump from their trucks to pick up a shovel and feverishly help in the digging of a trench; the construction of a Y. M. C. A. hut may require an extra man; whatever the service our Y. M. C. A. men must be prepared.

"We want men who are willing to take orders and fill them to the letter; men who can give orders and have them carried out. In France the smallest and apparently most insignificant duty may assume proportions of tremendous importance. Over there the test of the big man is his ability to do a small job in a big way. Men who are absolutely dauntless are the men for whom we are looking."

# *Col. George Pope Dies at Home in Hartford*

### Pioneer Bicycle and Motor Car Manufacturer and Leader in Instituting the Great National Automobile Shows.

Col. George Pope, treasurer of the National Automobile Chamber of Commerce and one of the pioneer automobile manufacturers of the country, died in Hartford, Conn., on April 20 at the age of 74.

**Col. George Pope, Former Treasurer of Pope Manufacturing Co., President of National Association of Manufacturers and Treasurer of the N. A. C. C.**

He was born in Boston on Jan. 4, 1844, and attended the public schools of Brookline, Mass. He enlisted in the 44th Massachusetts Infantry when the Civil War began, and when Col. Shaw's 54th regiment, composed of colored men, was formed, he was commissioned a captain. Capt. Pope was severely wounded and Col. Shaw killed in a bloody assault on Fort Wagner in Charleston harbor. He was commissioned a major at the age of 20 and at 21 was a lieutenant-colonel. In 1881 he began the manufacture of bicycles, beginning business with S. S. McClure, who handled the advertising end of the work for a time.

Col. Pope entered the employ of a Boston lumber company after the war and in 1868 was sent to Montreal to take charge of the concern's branch office there. In 1890 he was made president of the Hartford Cycle Co., a branch of the old Pope Bicycle Co., founded by his cousin, the late Col. Albert A. Pope. In 1899 when the bicycle interests of the country were consolidated and merged into the American Bicycle Co., he became vice president of the latter company. In 1903 he was made treasurer of the Pope Manufacturing Co. of Hartford, Conn., which manufactured the Pope-Hartford automobile.

Colonel Pope's first active interest in motor cars was in 1897, when his company put on the market several Columbia electric phaetons. He was at one time chairman of the show committee of the Association of Licensed Automobile Manufacturers and the Automobile Board of Trade. When the Electric Vehicle Manufacturers' Association was formed in February 1906, he was elected president.

When Col. Pope accepted the presidency of the National Association of Manufacturers five years ago the country was facing some of the gravest industrial problems in its history, chief of which was the growing antagonism between employer and employee. In March, 1916, he inaugurated the National Industrial Conservation movement. A country wide campaign, having for its object the establishment of a closer relationship between the wage earner, the wage payer and the consumer. When the United States entered the war Col. Pope redirected the aims of the National Industrial Conservation movement in such a way as to aid the government in its efforts to increase industrial production for war purposes. He also began an investigation into the subject of restoring injured soldiers and sailors to industrial usefulness, planning eventually to make the National Association of Manufacturers a clearing house for the reabsorption of American workers who had been crippled in the service of their country.

The success of the National Automobile Shows in New York and Chicago was due largely to Col. Pope's efforts as the chairman of the show committee of the Association of Licensed Automobile Manufacturers and its successor, the Automobile Manufacturers and its successor, the Automobile Chamber of Commerce.

He is survived by a brother living in Boston and by a daughter, Mrs. Charles H. Gillette of Hartford.

### PENNSYLVANIA RUBBER GIVES ELECTRIC SIGN.

The Pennsylvania Rubber Co. has tendered and had accepted by President Wilson for use in connection with the Third Liberty Loan their $30,000 talking electric sign on Columbus Circle, New York City.

# *M.&A.M.A. Members Classified in Divisions*

### Action Taken to Carry Out Grouping Plan and Form a War Service Committee.

The members of the Motor and Accessory Manufacturers Association will be classified under five divisions. Each of these divisions will have a chairman and the whole will form the War Service Committee, which is being created at the request of the Chamber of Commerce of the United States to cooperate with the War Department in the classification of industries to facilitate the placing of orders and speed up production.

A. W. Copland will be general chairman of the committee, which will consist of the following chairmen of the five groups: B. F. Tobin, president of the Continental Motors Corporation, motors and motor parts group, comprising makers of motors, parts and accessories in and on the engine; A. R. Demory, vice president of the Timken Detroit Axle Co., drive group, consisting of makers of clutches, transmissions, rear axles, brakes, universals, shifts, differential gears and housings for those parts; Christian Girl, president of the Standard Parts Co., chassis group, comprising section makers of frames, front axles, steering gears, fenders and radiators; J. N. Gunn, president of United States Tire Co., tire section, including manufacturers of tires, tubes, valves, rims and stems; H. J. Hayes of the Hayes Manufacturing Co., body group, consisting of makers of bodies, tops, lamps, clocks, upholstery, hair top bows and all accessories, parts and hardware used in body making.

The M. & A. M. A. credit department will hold its second semi-annual convention at Atlantic City on May 20 and 21, when the following subjects will be discussed: "Trade Acceptances from the Banker's Standpoint and from the Buyer's Standpoint;" "Airplane Activities;" "Trade Conditions of the Present Time;" "Trade and Economic Conditions After the War;" "Financing of War Order Production;" "Government Disbursements;" "How to More Readily Collect Accounts."

At the same meeting, which was held on April 19, five new members were elected as follows: Whitman & Barnes Manufacturing Co., Akron, O.; National Tool and Manufacturing Co., St. Louis, Mo.; Walden-Worcester, Inc., Worcester, Mass.; J. & D. Tire Co., Charlotte, N. C., and the Torbensen Axle Co., Cleveland, O.

Following a discussion among the directors as to the matter of paying the government income and excess profit taxes, it was decided to send a telegram to Secretary of the Treasury McAdoo, recommending that the laws be amended making possible the payment of the taxes in installments as a means of eliminating the financial stringency resulting from the sudden withdrawal of large sums of money from the banks at one time. It was suggested that the danger from this source would be eliminated if the taxes could be paid quarterly.

## PIKES PEAK HIGHWAY OFFICIALS MAKE PLANS.

President C. F. Adams and Secretary-Treasurer A. W. Henderson met with President F. R. Calvert of the Indiana Division of the Pikes Peak Ocean-to-Ocean Highway Association at Indianapolis on April 8, and with President E. S. Ralph of the Ohio division at Springfield on April 9, for conference regarding the work of the National Association, and that of these two state divisions. At these conferences particular emphasis was placed upon the importance of keeping the state divisions intact and active for such work as may be necessary; to the desirability of completing the markings through each state at the earliest practicable date; to finance and to the arrangements for early meetings of the state divisions in order that they may map out their programs and take hold of the work for the year.

Assurance was given that every effort will be made to see that the gaps in the marking both in Ohio and Indiana will be closed up; and arrangements for the state division meetings will be considered at the close of the Liberty Loan campaign. Gratifying reports as to road conditions and as to plans for needed road development were made.

President E. S. Ralph has announced the appointment of Mr. T. J. Appleyard, secretary of the Newark, O., Chamber of Commerce, as the new secretary-treasurer of the Ohio state division. He succeeds Mr. E. W. Mentel, the efficient secretary, who has recently taken up his new duties as the industrial commissioner of the Kansas City, Mo., Chamber of Commerce.

National headquarters has been advised of the resignation of Mr. R. M. Pope of Duchesne, Utah, as president of the Utah state division, and of the appointment of Mr. H. W. Harvey of Heber City as his successor.

## OWNER NOT LIABLE FOR INJURY CAUSED BY DRIVER.

An owner of an automobile driven by his employee is not liable for damages arising out of an accident unless the driver is directly engaged upon business for the owner, according to a decision rendered in the Appellate Division of the Supreme Court in Brooklyn, N. Y., in a suit against the H. T. Chandler Co. of Long Island City. The plaintiff had obtained a verdict of $7500 in the Westchester Supreme Court and this award was set aside by the Appellate Division and the complaint dismissed.

The plaintiff was injured when an automobile driven by Frederick K. Jones, sales manager for the company, struck her carriage.

# *Local Authorities Are Hampering Driveaways*

### Obstacles Put in Way of Efforts to Conserve Railroad Cars—Lack of Uniformity in State Laws Responsible.

Patriotic efforts of the automobile trade to avoid use of railroad cars by delivering motor cars from the factories by highway under their own power are being interfered with by over-zealous local officials acting under technicalities of the various state laws.

From 30 to 40 per cent. of the automobiles produced by the larger manufacturing companies are being delivered overland because of the difficulty of obtaining freight cars for shipping, but in many places in states through which the strings of new cars are driven en route to destination the drivers are held up by the local sheriff or constable and threatened with arrest and fines.

For example, a string of 60 cars that was being driven from Lansing, Mich., to New York City was halted in York, Pa., by the sheriff because only the first and last cars had license plates. The sheriff insisted that every car should have a plate. To take out a Pennsylvania license would have cost $20 for each car, although the train was merely passing through one corner of the state and all the vehicles were being delivered to a single dealer in New York City.

It was necessary for the dealer to secure 50 odd duplicates of his New York dealer's license, at $5 each, and ship them to York before the drive-away could continue. This caused a delay of more than a day, an expense of more than $250 for plates and hotel bills and other expenses aggregating $750. Thus it cost more than $1000 just to drive once through the northeast corner of Pennsylvania.

In another instance a string of more than 30 automobiles was held up in Wilmington, Del., and the drivers threatened with arrest because they did not have state operators' licenses. The cars were being driven from New York to a dealer in Norfolk, Va. Neither New York state nor Virginia requires such licenses and the Norfolk dealer contends that it is unfair and unnecessary to require drivers of cars passing through a corner of Delaware on a single business trip to take out a license to operate for a year in that state.

The police in Frederick, Md., objected because some of the cars had the dealer's license number painted on cardboard instead of the regular metal number plates. In Virginia only six or eight duplicates of the dealers' license plate are issued to a single dealer, who is permitted to make temporary duplicates himself, but the authorities in Maryland threatened him with a fine for this.

# Motor Car Plants Not On Priority Schedules

### New List Reveals Administration's Attitude, Which Is Confirmed by Further Production Curtailment Plans.

The United States Fuel Administration will be governed in the distribution of coal and coke by a slightly amended list of priorities recently arranged by the War Industries Board. The board has listed certain industries for preference, whose operation is of exceptional importance, measured by the extent of their direct or indirect contribution either toward winning the war or toward promoting the national welfare. Not only will the industries coming under the new classification be given preferential treatment by the Fuel Administration, but also in transportation by the railroads.

**This action is taken to confirm the administration's attitude toward motor car production in enforcing a further curtailment, as the fact that the automobile plants are not named on the priorities list is of itself a certain indication that the industry is to be restricted.**

The following is the list of preferred industries:

Aircraft: Plants engaged exclusively in manufacturing aircraft or supplies and equipment therefor.

Ammunition: Plants engaged in the manufacture of ammunition for the United States government and the allies.

Army and Navy cantonments and camps.

Arms (small): Plants engaged in manufacturing small arms for the United States government and the allies.

Chemicals: Plants engaged exclusively in manufacturing chemicals.

Coke plants.

Domestic consumers.

Electrical equipment: Plants manufacturing same.

Electrodes: Plants producing electrodes.

Explosives: Plants manufacturing explosives.

Farm implements: Manufacturers exclusively of agricultural implements and farm operating equipment.

Feed: Plants producing feed.

Ferro-alloys: Plants producing.

Fertilizers: Manufacturers of fertilizers.

Fire brick· Plants producing exclusively.

Food: Plants manufacturing, milling, preparing, refining, preserving and wholesaling food for human consumption.

Food containers: Manufacturers of tin and glass containers and manufacturers exclusively of other food containers.

Gas: Gas producing plants.

Guns: (large) Plants manufacturing same.

Hemp, jute and cotton bags: Plants manufacturing exclusively hemp, jute and cotton bags.

Insecticides: Manufacturers exclusively of insecticides and fungicides.

Iron and steel: Blast furnaces and foundries.

Laundries.

Machine tools: Plants manufacturing machine tools.

Mines.

Mines: Plants engaged exclusively in manufacturing mining tools and equipment.

Newspapers and periodicals: Plants printing and publishing exclusively newspapers and periodicals.

Oil: Refiners of both mineral and vegetable oils.

Oil production: Plants manufacturing exclusively oil well equipment.

Public institutions and buildings.

Public utilities.

Railways.

Railways: Plants manufacturing locomotives, freight cars and rails, and other plants engaged exclusively in manufacture of railway supplies.

Refrigeration: Refrigeration for food and exclusive ice producing plants.

Seeds: Producers or wholesalers of seeds (except flower seeds).

Ships (bunker coal): Not including pleasure craft.

Ships: Plants engaged exclusively in building ships (not including pleasure craft) or in manufacturing exclusively supplies and equipment therefor.

Soap: Manufacturers of soap.

Steel: Steel plants and rolling mills.

Tanners: Tanning plants, save for patent leather.

Tanning extracts: Plants manufacturing tanning extracts.

Tin plate: Manufacturers of tin plate.

Twine (binder) and rope: Plants producing exclusively binder twine and rope.

Wire rope and rope wire: Manufacturers of same.

Automobile plants are not in the list.

# M. & A. M. A. Refuses Sanction to New Shows

### Turn Down Applications from Promoters of Accessory Exhibitions to Be Held in Chicago.

At the quarterly meeting of the directors of the Motor and Accessory Manufacturers Association the application for sanctions for the two accessory shows to be held in Chicago during the coming fall were turned down, but this action does not in any way affect the organization's attitude toward the two national shows, which will be continued as usual. The association, through its manager, W. M. Sweet, is conducting an investigation of the tractor field with the object of participating in a tractor exhibition if the results warranted such action.

The two shows for which a sanction was asked are those of the National Association of Automobile Accessory Jobbers and the Automotive Accessories Exposition, both of which are described elsewhere in this issue.

### GARAGE MEN OF CANTON, ILL., FORM NEW ASSOCIATION.

The Canton Garage Owners' Association has been organized in Canton, Ill., by the garage owners of that city and the following officers have been elected: President, A. R. Street; treasurer, Meade McClatchey; secretary, T. J. Jelly. The organization will be affiliated with the Illinois Garage Owners and Dealers Association. The president of the latter organization, who was present and aided in forming the local association, told of the many benefits to be derived through organization and the improvement in trade conditions that would result.

# Advance in Motor Car Insurance Limits

### Underwriters Fix New Schedules Applicable to Both Passenger and Commercial Cars.

The Eastern and New England Automobile Underwriters' conference has sent out a joint notice of an increase in the limits of insurance as follows· "By resolution of the Executive Committee of the National Conference, the percentage limits of insurance allowable upon last year's cars (that is cars bought new more than six, but not more than 18 months prior to insurance), columns C, D and E, and year before last cars (that is cars bought new more than 18, but not more than 30 months prior to insurance), columns B, C, D and E, are increased by adding 10 per cent. to the percentage limits of insurance shown on the present rate sheet.

This makes the percentage limits of insurance read as follows:

Last year's cars (that is cars bought new more than six, but not more than 18 months prior to insurance):

Column A......No limit
Column B......80 per cent.
Column C......80 per cent.
Column D......70 per cent.
Column E......70 per cent.

Year before last cars (that is cars bought new more than 18, but not more than 30 months prior to insurance):

Column A......No limit
Column B......60 per cent.
Column C......60 per cent.
Column D......50 per cent.
Column E......50 per cent.

These changes apply to both passenger and commercial type cars and are effective immediately.

# License Fees Over $3,000,000 in Pennsylvania

### Sum Is Almost as Great as the Total Received During the Entire Year of 1917.

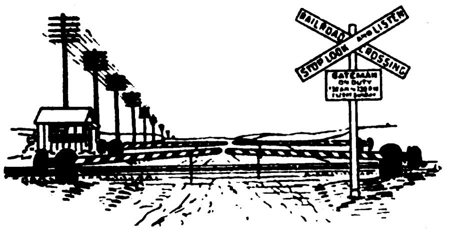
The State of Pennsylvania has issued over 342,219 licenses this year up to April 1st and has taken in over $3,000,000, or nearly as much as the total received during the entire year of 1917. The licenses have been issued under the following classifications:

Pneumatic tired vehicles, 252,770; solid tires, 21,106; tractors, 969; trailers, 643; dealers, 6556; tractor dealers, 75; motorcycles, 12,002; drivers, 48,026; transfers, 72. In addition to these totals there are 66,538 non-paid operators of cars in the state. This number includes owners, wives and members of the owners' families who run their own cars.

# *Connecticut Issues Grade Crossing Warning*

## Campaign of Publicity Inaugurated To Lessen The Danger of Motor Car Accidents on Railroad Tracks

The State of Connecticut has not only been a leader in securing legislation to improve conditions for the operation of motor cars and insure the safety of the motorists, but has been among the foremost in adopting steps for furthering the campaign for safety in a practical manner.



Danger, Stop, Train Coming.

The rule that "the ignorance of the law excuses none" is quite generally accepted in the courts in passing upon a person's illegal acts, and this fact has been the reason for the deplorable neglect on the part of executive departments following up their duties, as they stand on the ground that their responsibility ends with the enactment of the law. Such an attitude only serves to bring punishment to a guilty party and is only partially effective in bringing about the reform that was the object of the legislation.

In Connecticut, however, the officials believe that by thoroughly acquainting the public wth the law and its objectives in a practical manner they not only secure better results in attaining the reforms sought by the statutes, but improve motoring conditions in general by eliminating many of the accidents resulting from criminal operation of automobiles.

To this end the automobile department of the state took space at the recent Bridgeport Automobile Show and in addition to receiving registration fees at the exhibit, gave out various information of interest to motorists.

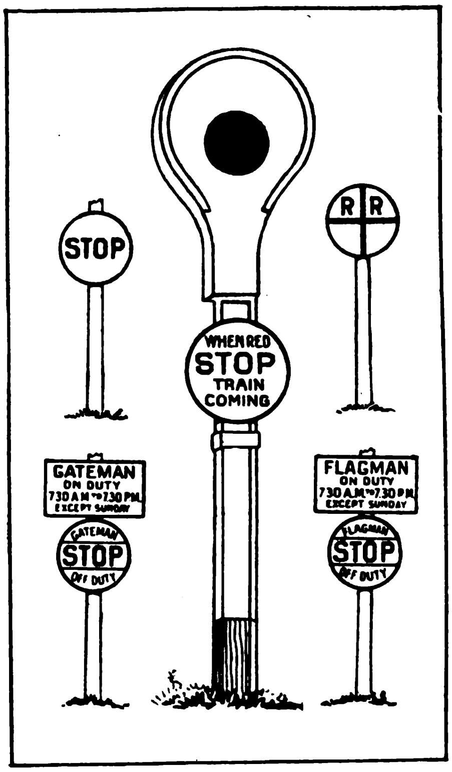
The Public Utilities Commission of Connecticut in its investigations along safety lines found that the railroad grade crossings were a source of increasing danger to motorists. In furthering the safety campaign in this respect it was found that many motorists were entirely ignorant of the meaning of various crossing signs and signals, which fact left them open to great danger. To remedy this condition the commission had a circular prepared showing the various methods of grade crossing protection and what they indicated so that motorists could recognize these danger warnings, understand what they signified, and be on the safe side.

These circulars, which are being widely distributed and were given out at the Bridgeport show by the state representatives, bear the following introduction in addition to the pictures of the various signs and signals as reproduced on this page:

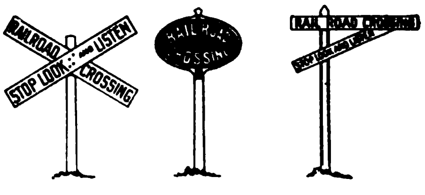
### RAILROAD CROSSING PROTECTION.

"Owing to the number of fatal accidents at grade crossings, especially since the increased use of automobiles, the Public Utilities Commission made an investigation with a view of adopting such methods as would more adequately safeguard the public.

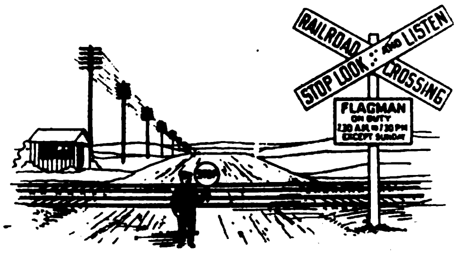
"At a joint conference with a Committee of the National Association of Railroad Commissioners it was decided to procure as far as possible, uniform legislation in the several states, establishing a standard system of signs and signals for the prevention of accidents at grade crossings, and a tentative draft of proposed legislation was sent to all state commissions.



Centre: "Danger, Automatic Crossing Signal. Upper Left: Stop, Dangerous Crossing. Upper Right: Distant Warning. Reduce Speed, Railroad Crossing 300-500 Feet Ahead. At Left and Right: Caution, Dangerous Crossing, Flagman or Gateman Off Duty.



Types of Railroad Signs Located at Crossings.



Danger, Stop, Train Coming.

"Our commission presented such proposed legislation to the General Assembly of 1917, resulting in the passage of chapter 373 of the Public Acts of 1917, being substantially similar to legislation adopted by most of the other states.

"In addition to the signs specified in said act, authority was given to the Public Utilities Commission to prescribe for each crossing such system and arrangement of signs and signals as public safety reasonably requires. The commission made a survey of all grade crossings in the state, designating the particular requirements for each and adopting the signs and signals appearing on the accompanying diagram.

"In order to call the attention of the traveling public to these warnings the Commissioner of Motor Vehicles kindly co-operates in the distribution of the diagram and instructions."

This action, as indicated in the circular, is to lessen the confusion that naturally resulted under the old system when different crossing signals were used to indicate the same meaning, making it impossible almost for a motorist to tell what a sign or signal at a grade crossing meant unless he was familiar with it. As it would be impossible for a person to be familiar with all the grade crossings in the country, the only solution of the problem lay in a standard system of signs and signals which would be used in all states.

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### PRICE OF AMERICAN CAR IS LOWERED.

The American Motors Corporation, Plainfield, N. J., has announced a cut in the price of the five-passenger touring car from $1695 to $1595.

At a recent meeting of the company Robert Bursner was elected president and Louis Chevrolet was again elected vice president and chief engineer. George W. Cravens was elected general manager and Proctor W. Hansl secretary-treasurer. The company will sell $100,000 treasury notes to provide additional capital.

# Activities of Prominent Men of the Industry

## Resignations, Promotions and Other News of the Personnel of Motor Vehicle Manufacturing and Merchandising Companies and Allied Businesses

Harry F. Prescott, Sales Manager of Disco Electric Manufacturing Co.

**Charles G. Bohn** is resigning from the Aluminum Castings Co., Cleveland, O. He will form a company of his own.

**George McIntyre** has resigned as sales manager of the Commonwealth Finance Corporation, New York City. He has been managing the partial payment company's sales since it was formed. His future plans has not been announced.

**W. A. Cluff** has been elected to the board of directors of the Mason Tire and Rubber Co. He is the auditor of the company and was formerly with the Union Commercial Bank and also the Reserve Trust Co. of Cleveland. Mr. Cluff has been appointed first assistant treasurer of the Mason Tire and Rubber Co.

**W. E. Dermody** has been appointed manager of the Boston branch of the Goodyear Tire and Rubber Co. He was for several years manager of branches of the company in various parts of the South. He succeeds C. B. Peschmann. He started with the company in 1911 as a salesman and the following year was made field manager of the central division of the solid tire department, with headquarters in the factory at Akron. In 1914 he was appointed manager of the Nashville, Tenn., branch. He was very successful at this post and was promoted to manager of the larger branch at New Orleans.

**C. E. Williams**, formerly assistant sales manager of the Velie Motors Corporation, Moline, Ill., is now with the Selden Truck Sales Co., Rochester, N. Y.

**L. E. Wood** is now assistant chief engineer of the Mitchell Motors Co., Racine, Wis. He was formerly designer for the Cadillac Motor Car Co.

**Harry F. Prescott**, who was formerly connected with the Saxon Motor Car Co.'s sales department, has been appointed sales manager of the Disco Electric Manufacturing Co., Detroit.

**F. C. Brown** has been appointed sales manager of the Sanford Motor Truck Co., Syracuse, N. Y. He will exercise a close supervision over its advertising.

**W. L. Agnew**, formerly advertising manager of the Chalmers Motor Co., has been appointed manager of the southern district in the wholesale department of the Liberty Motor Car Co., Detroit, Mich., and will have headquarters at Savannah, Ga.

W. L. Agnew, Liberty Wholesale Representative in South.

**Charles P. Landman** is now the president of the Maxwell Distributors' Association of the Central East. This association is an organization consisting of the big Maxwell distributors in the district that includes Western New York, Western Pennsylvania, Virginia, West Virginia, Michigan, Ohio and Indiana, known as the Cleveland zone. The object of the organization is to work out ideas and cooperative features for the betterment of the Maxwell business. Toledo will be the headquarters of the association.

**L. A. Keller** has been appointed manager of the Studebaker branch in Chicago. He has been with the branches in Omaha, Neb.; Portland, Ore., and Los Angeles, Cal.

**Charles McNulty** has joined the Oklahoma Truck Corporation, Oklahoma City, Okla., as secretary, treasurer and general manager. This is a new organization, which will distribute Bethlehem trucks throughout the State of Oklahoma and in Wichita, Kan. He was formerly district sales manager of the Saxon Motor Car Corporation.

**H. M. Adams** succeeds A. W. Sayer as eastern district manager of the Willard Storage Battery Co., who has been called to the main office. Mr. Adams will have his headquarters in New York.

**L. A. Woodward** has been promoted to sales manager of the Smith Motor Truck Corporation. His headquarters will be in Chicago. He was formerly southern sales manager in Atlanta, Ga.

**Paul J. Barnard** is now with the Walker Manufacturing Co., Racine, Wis., and will act as assistant to Willard Walker, secretary and treasurer of the company. He was formerly sales and advertising manager for the Harvey Spring Co. The Walker company has erected a large warehouse, containing 5000 square feet of floor space.

**Langdon A. Smith** is now in the main office in Detroit of the Maxwell Motor Co. as assistant to T. J. Toner, director of sales. This gives Mr. Toner two assistants, the other being C. E. Stebbins. Mr. Smith has worked up through the Maxwell ranks from district salesman in Texas to zone supervisor and then to the big eastern field from which he goes to the home office.

**J. P. Vane** will make his headquarters in San Francisco as western district manager for the Olympian Motors Co.

**S. A. House** has assumed duties as sales manager with the Hayes Wheel Co. of Jackson, Mich. He has resigned as sales manager of the Auto Wheel Co., Lansing, Mich.

**George W. Kerr** is now manager of the body department of the Mitchell Motors Co., Racine, Wis. He was formerly body engineer of the Reo Motor Car Co., Lansing, Mich.

J. F. Richman, New Factory Manager of Allen Motor Co.

**J. D. Maxwell** has joined the Automotive Products Section of the Council of National Defense, where he will work with Harry L. Horning. He has been for several years living in retirement and was the designer of the Northern, and later the Maxwell cars, manufactured by the Maxwell-Briscoe Co. He will come to Washington to assume his new duties.

**J. E. Eckenrode** has been appointed central district sales manager of Fuller & Sons Manufacturing Co., Kalamazoo, Mich., with headquarters in Detroit. He succeeds Gould Allen, who has resigned.

**Joseph C. Weston** has been elected vice president of the United States Tire Co., New York. When the company was formed he was appointed manager of the Pacific coast division and was later made general sales manager at the New York office.

**H. S. McClellan** is now superintendent of plant one of the Buick Motor Co. at Flint, Mich. He was formerly general superintendent of the Chalmers Motor Co., Detroit.

**William H. Noyes** has been appointed manager of the retail department of the Cleveland Rubber Corporation, Cleveland. He was recently service manager of the Oldsmobile in Cleveland.

**Charles A. Clark**, formerly with the Knox Tractor Co. and more recently with the Gramm-Bernstein Co., has been appointed eastern district sales manager of the Acason Motor Truck Co., Detroit. He will have charge of all eastern territory, with headquarters in Boston.

**Edward Maurer** has resigned as chief engineer of the Lewis Spring and Axle Co., Chelsea, Mich., and has been appointed superintendent of shops of the Solvay Process Co., Detroit.

**E. P. Smith** has joined the engineering department of the Garford Motor Truck Co., Lima, O. He was formerly engineer of the Hercules Motor Manufacturing Co.

**M. H. Hoolinshead** has been appointed to take charge of the advertising for the Saxon Motor Car Co.

J. D. Maxwell Takes Up Work in Council of National Defense.

**The Cleveland Tractor Co.** and the Weidely Motors Co., Indianapolis, Ind., have established closer relations. George Weidely, vice president of the company bearing his name, becomes associate engineer for the tractor company. The latter company sends A. F. Knobloch, its general manager, to the Weidely plant as general manager. Each executive spends two days a week in the other plant. W. H. Knobloch, a brother of A. F. Knobloch, has been made production manager for the Weidely company.

**Albert Guyot,** who has been discharged from the army as the result of injuries received while on active service as an airplane pilot, has entered into partnership with N. Causan as a firm of consulting engineers. He was winner of third prize on a French Delage in the 1914 Indianapolis race. Engineer Causan has a reputation as designer of high efficiency racing engines, having produced successful boat and car engines for Delage, Panhard-Levassor and Despujols.

Albert Guyot, Famous Car Pilot, Starts Engineering Firm.

**E. H. Shepard** has been appointed manager of the Detroit branch of the Stromberg Motor Devices Co., succeeding George H. Hunt. He has been sales engineer for the Stromberg company in Detroit for the last five years.

**J. F. Richman** has resigned as factory manager of the Cole Motor Car Co., Indianapolis, Ind., and has accepted the position of manufacturing manager of the Allen Motor Co. of Fostoria, O. Mr. Richman has been connected with the Cole company for four years.

**Henry H. Hower**, sales manager of the Willys-Overland Co., Toledo, O., has given up his duties for the duration of the war and has gone into war material production. He has taken the management of a plant in New London, Conn., manufacturing navy supplies.

**Charles W. Price** is now sales manager in charge of advertising for the Osgood Lens and Supply Co., Chicago, Ill.

**H. W. Goewey**, who was advertising manager of the Saxon Motor Car Corporation, has accepted a position with the Trussed Concrete Steel Co., Youngstown, O.

A. F. Knobloch, Manager of the Cleveland Tractor Co.

**Joseph C. Weston** has been elected vice president of the United States Tire Co. He came up from the U. S. tire ranks through the Morgan & Wright division, first as salesman, then as sales manager, and next as secretary. J. Newton Gunn, president of the company, has been re-elected. The other officers are: Vice presidents, Charles J. Butler and Ernest Hopkinson; treasurer, W. H. Blackwell; assistant treasurer, John Williams; assistant secretaries, John D. Carberry and P. O. Eckhart. The board of directors, of which Col. Samuel P. Colt is chairman, consists of J. N. Gunn, J. C. Weston, C. J. Butler, E. Hopkinson, Walter S. Ballou, Nicholas F. Brady, James B. Ford, Lester Leland, George S. Shugart, Homer E. Sawyer and Elisha S. Williams. George S. Shugart has been appointed general manager of branches by the company, succeeding O. S. Tweedy, who has resigned.

**E. A. Hornbostel** has been appointed manager of the Chicago branch of the Findeisen & Kropf Manufacturing Co., manufacturer of Rayfield carburetors. Mr. Hornbostel has been with the company for some time and succeeds E. A. Rossow, who resigned to take up other lines in the motor car field.

**Stephen D'Orlow,** formerly chief engineer of the Oak Manufacturing Co. of Alma, Mich., has been appointed research engineer of the Republic Motor Truck Co.

**Henry T. Myers** succeeds George N. Gordon as Boston branch manager of the Studebaker corporation. Before he went to Detroit Mr. Myers occupied the position for three years in charge of the Boston branch. He will continue as manager of commercial car sales.

**George C. McMullen** is now representing the Timken Roller Bearing Co., with headquarters in San Gabriel, Cal. He was formerly assistant plant manager of the metal products plant of the Timken-Detroit Axle Co.

**John H. W. Mackie,** formerly Chalmers distributor in Iowa, has been made assistant sales manager of the Saxon Motor Co., Kansas City.

# *Rousing Enthusiastic Campaign In The*

## New York, Chicago, Philadelphia, Boston and Many Other Cities Are Being Stirred By the Energetic Activities of Automobile Men

While this is the busiest season of the year with the automobile tradesman, whether a car, tire or accessory dealer, yet few of these men are devoting much of their time at present to their immediate business, but have become actively allied with some one of the various committees that are working at Uncle Sam's business, which just at present is making war, and this business needs vast sums of money.

No men in America, taken as a class and representing a certain line of trade, are devoting any more time, money or energy toward the Third Liberty Loan than the thousands of men engaged in some one of the branches of the automobile trade. In the larger cities the automobile trade associations have organized committees who have practically abandoned all business effort except that of reaching their quota of Liberty Bonds.

Many millions of dollars will be raised by these efforts that otherwise might have been slow in coming if it was subscribed at all, and great credit is due these men who have diverted their time from their business at a time when more than any other in the year they should "make hay while the sun shines."

## *Philadelphia Trade Will Raise $1,000,000*

### Raised Twenty Per Cent. of Their Quota on First Day of Campaign.

The Philadelphia Trade Association made a rapid start on its first drive for the Third Liberty Loan, raising nearly 20 per cent. of its quota the first day, or $170,000. The trade has been divided into three groups and are after a total of $1,000,000. There is a motor car, tire and accessory division. A. E. Maltby is chairman of the Group A, motor cars, and W. A. Almy is vice-chairman. The members of this committee are: C. R. Cunliffe, A. M. Pollock, S. Stankowitch, S. R. Blockson, C. W. Lloyd, H. L. Bogardus, F. G. Browning, J. J. Smith, E. W. Burnshaw, Jr., O. W. Doolittle, Benjamin Hoffman, E. M. Bartlett, T. S. Johnston, H. B. Harper, W. G. Herbert, A. W. Lockwood, J. C. Bartlett, N. G. Wilson, A. W. La Roche and G. P. Parker; Group B, tire division, is composed as follows: Chairman, W. R. Walton; vice-chairmen, Garfield List, E. H. Fitch, F. A. Kissel, D. D. Yard, S. M. Beatty, H. D. Worthington, R. L. Warren, Charles E. Fellows, E. B. Richardson, T. Y. Sutthan, Harry G. Fitler, H. E. Elliot, W. F. Metzgar; Group C, accessories, is composed as follows: Chairman, G. B. Shearer, Jr.; vice-chairmen, A. W. Stellwag, E. B. P. Carrier, Albert Streicher, N. A. Petry, C. H. Walz, H. E. Almang, T. Scott Evanson, E. E. Smith, W. J. Little, C. B. Solly, George L. Carroll, E. Fyfe, J. H. Nash, W. L. Batt, S. C. Simon and F. E. Stow.

## *New York Trade Will Have Rally*

### Meeting Will Be Held Under Rainbow Division of the Special Liberty Loan Committee.

Members of the automobile trade and allied lines in New York City are planning a rousing rally as a means of injecting the last iota of enthusiasm into the present Liberty Loan campaign which is being conducted by the various motor car organizations. The meeting will be held in the Automobile Club of America and will be under the auspices of the Rainbow Division of the Special Liberty Loan Committee for the Automobile and Accessory Trades. Cooperating with this committee are the National Automobile Chamber of Commerce, the Automobile Dealers' Association of the city of New York, the Automobile Club of America, the Brooklyn Motor Vehicle Dealers' Association and the Bronx Automobile Dealers' Association.

One of the features of the evening will be a talk by Sergeant Harold Wright of the French Flying Corps and the Lafayette Flying Corps. He is a New York boy who has just returned from the fighting front after nearly two years in the thick of it.

General Manager Alfred Reeves of the National Automobile Chamber of Commerce, who has just made an extended tour of the automobile factory cities, will make an address on the motor car industry in its present relation to the prosecution of the war.

The rally is to be an invitation affair and cards may be obtained from Charles A. Stewart, general manager of the Automobile Dealers' Association, Hotel Woodward. Application should be made at once as the capacity of the ball room of the club is limited.

Charles M. Brown, president of the Automobile Dealers' Association of New York City, is chairman of a trade committee which raised $5,000,000 on the second loan, and it has a quota of $12,000,000 on the third loan. A force of 100 salesmen will canvass the trade.

The members of the general committee are: Chairman, Charles M. Brown, the Winton Co.; vice-chairman, Charles E. Miller; secretary, Charles A. Stewart; R. M. Johnston, the White Co.; E. S. Hare, Packard Co.; F. G. Carrie, New York Marmon Co.; C. E. Reiss, Charles E. Reiss & Co.; A. G. Southworth, Buick Motor Co.; Walter E. Woods, Van Cortlandt Vehicle Corporation; W. C. Poertner, Poertner Motor Car Co.; Harry Houpt, Hudson Motor Car Co. of New York; H. J. De Bear, Maxwell Motor Co.; I. M. Uppercue, Cadillac Motor Co. of New York; C. H. Larson, Oldsmobile Co. of New York; E. Lescaris, 114 West 54th street; John F. Plymmer, Liberty Motor Car Co.; William Haradon, Royal Garage; John B. Elsey, Bronx Auto Dealers' Association. Representing Brooklyn Automobile Sales Section: Arthur E. Randall, Brooklyn Motor Dealers' Association; A. D. Corwin, Buick Motor Co.; C. J. Maxson, Reo Motor Car Co.; C. M. Bishop, Bishop, McCormick & Bishop; William H. Kouwenhoven, 2 Remsen place. Representing New York Accessories Section: J. C. Nichlos, 161 Broadway; Louis Mansbach, care Times Square Auto Co.; William A. Allen, 16 West 61st St.; F. W. White, Stewart-Warner Co. Representing Brooklyn Accessories Section: D. D. Martin, 1374 Bedford avenue; Frederick Brecht, 1580 Flatbush Ave.; Robert P. Lumley, 1408 Newkirk Ave.; Charles F. Batt, 998 Bergen St.

## *Chicago Association Out After Quota $1,800,000*

### All Divisions of the Trade in the Organization Promoting the New Liberty Loan.

The Chicago Automobile Trade Association, which raised $969,000 subscriptions for the Second Liberty Loan, is out to make its quota of $1,800,000 under the leadership of its president, George H. Bird, who is chairman of the Liberty Loan Drive Committee.

The other vice chairmen of the sub-committees are: Trucks, E. J. Kilborb; accessories, Ward Perry; tires, A. W. Moore; wagon and body builders, William J. Hughey; garages and repair shops, H. E. Halbert; liverymen, F. M. Johns; motorcycles, R. C. Crist.

There are also four sales managers working in the campaign who are called captains, and they head the various divisions as follows: Passenger cars, R. B. Barton; trucks and accessories, M. Ferguson; tires, wagons and body builders, J. R. Carnahan; garages, repair shops, liverymen and motorcycles, C. E. Sutton.

# *Trade To Raise The Third Liberty Loan*

## Big Dealers Organizations and Associations are Devoting Much Time and Great Energy to Putting Over the "Anti-Autocracy Securities.''

### RHODE ISLAND FORD AGENT TAKES $100,000 BONDS.

Dutee W. Flint, the well known agent for Ford cars in Rhode Island and Eastern Connecticut, gave the attendants in one of the Liberty Bond booths in Providence a mild surprise when he stepped up to the window and stated that he would buy a few more of the anti-autocracy securities.

"How many?" asked the lady in the booth.

"Well, $100,000 worth this time," said the genial agent, as he reached for his fountain pen to execute the necessary document to complete the transaction.

### CHAMPION EMPLOYEES ALL SUBSCRIBE TO NEW LOAN.

All of the employees of the Champion Ignition Co. subscribed to the Third Liberty Loan, the amount subscribed being $45,000. The Champion Ignition Co. as a firm also took bonds to the amount of $50,000.

## *Boston Dealers Start Active Campaign*

### Every Dealer and Employee Connected with the Trade in the Hub Will Be Solicited.

Every man in the Boston motor vehicle trade and every employee is being solicited to buy Liberty Bonds by a committee of the Boston Dealers' Association, of which George B. Kimball of the Henley-Kimball Co. is chairman and which is made up of about 40 members of the motor car, truck, tire and accessories trade of that city.

President J. H. MacAlman of the Dealers' Association presided at a meeting of the committee at Hotel Lenox and afterwards turned over the meeting to Mr. Kimball, who outlined the plans for the drive. He announced that the entire trade had been divided into sections and that every individual connected with it in any way will be canvassed. He said that instead of organizing teams the members of the committee will do the work individually. He urged the workers to make every effort to get in their pledges quickly and to make daily reports. A list of banks was read which will handle the buying of bonds for people on the $1 a week basis. The committee handling the drive includes: George B. Kimball, chairman; Day Baker, G. M. Leghorn, F. A. Hinchcliffe, J. J. MacGregor, F. E. Wing, J. L. Judd, Otto A. Laston, J. S. Donovan, A. L. Danforth, C. E. Fay, A. H. Sowers, C. S. Henshaw, R. P. Page, Jr., J. L. Snow, C. P. Rockwell, J. M. Linscott, Lester Perrine, W. J. Connell, F. W. Stockbridge, Frank P. Allen, Norman Halliday, J. W. Bowman, J. S. Hathaway, L. B. Sanders, I. M. Boles, J. J. Harrington, George Crow, Russell Green, John B. Wilson, John Coward, Wallace Page, A. P. Underhill, Charles Bates, D. W. Palmer, W. H. Stevens, John H. Johnson, George W. Canterbury, J. F. Utterback, D. J. Fleming, Mr. Henderson, Mr. Brackett and Mr. Mitchell.

AC SPARK PLUGS
CHAMPION IGN. CO.
CHAMPION IGNITION COMPANY

The AC Float, Which Participated in the Liberty Day Parade at Flint, Mich., on April 6th.

### NEW WILLYS-OVERLAND PRICES IN EFFECT.

The Willys-Overland Co. Inc., Toledo, O., has advanced prices on its cars. The new prices, which went into effect on April 1, follow:

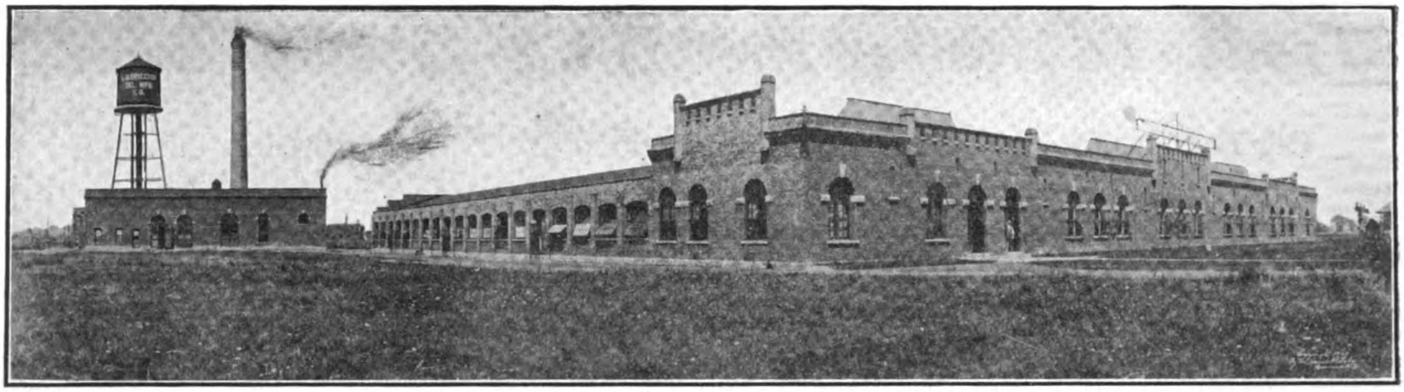
| Model | New Price |
|---|---|
| Model 90 touring | $850 |
| Model 90 roadster | 835 |
| Country club | 875 |
| Model 90 sedan | 1340 |
| Model 85-4 touring | 965 |
| Model 85-4 roadster | 965 |
| Light six touring | 1195 |
| Light six roadster | 1195 |
| Light six coupe | 1420 |
| Light six sedan | 1620 |
| Willys six touring | 1450 |
| Willys club six | 1450 |
| Willys six sedan | 2045 |
| Willys-Knight four touring | 1625 |
| Willys-Knight four coupe | 2275 |
| Willys-Knight eight touring | 2100 |
| Willys-Knight eight sedan | 2800 |
| Willys-Knight eight limousine | 2900 |
| Willys-Knight eight town car | 2900 |
| Model 90 panel delivery wagon | 865 |
| Model 90 express delivery wagon | 840 |
| 1200 pound express delivery wagon | 975 |

The war tax is not included in any of the new prices listed here, which are all f. o. b. Toledo.

### FLETCHER CARBURETOR MOVES INTO A NEW PLANT.

L. V. Fletcher & Co., well known carburetor manufacturers of Long Island City, N. Y., have expanded their factory facilities by moving into the plant of the Neptune Meter Co., 192-200 Jackson avenue, Long Island City, New York. The Fletcher Carburetor is manufactured in the Neptune plant complete in every process from the rough casting to the finished product and has a plant capacity of over 2500 carburetors per day.

In addition to the top and side outlet models made for all makes of cars and motor vehicles, the company manufactures a special model for Fords known as the "Trident." The company have closed a contract with the Davis Service Station of Buffalo, N. Y., to handle sales and service on their product in Buffalo. It also has sales and service stations on their carburetors in the leading cities of the United States, where complete stocks of carburetors and parts are kept, as well as repair facilities.



Large Modern Factory and Power Plant of the Ericsson Mfg. Co., Buffalo, N. Y., Where the Berling Magneto Is Manufactured.

# HAPPENINGS AMONG THE CAR AND PARTS MAKERS

## What Several of the Leading Manufacturers in the Motor Vehicle Industry and Allied Lines Are Doing or Have Under Consideration

**The Stutz Motor Car Co.**, Indianapolis, Ind., has increased the wages of all employees 10 per cent. The company will operate on the basis of a nine-hour day with no work Saturday afternoons, making 50 hours to work. About 500 men share in the increase of wages

**The Racine Auto Tire Co.**, Racine, Wis., makers of Horseshoe tires, is distributing to its dealers mileage record books so that car owners may keep a record of the service given by each tire. The book is so arranged that it will slip into a bill case and everything that can happen to a tire from punctures and stone bruises to blow-outs can be noted in it.

**The Theisen-Braithwaite Co., Inc.**, Port Huron, Mich., is erecting an addition 70 by 150 feet to its present foundry. The company will install the latest equipment for increasing the production of motor car castings.

**The Commerce Body Co.** is the new name of the Porter Manufacturing Co., Ann Arbor, Mich. The company will manufacture on a larger scale truck and trailer bodies.

**The Automotive Manufacturing Co.**, Detroit, Mich., has been formed with a capital of $125,000. The company will manufacture universal joints, pressed steel parts, steering links and ball and socket joints. It now occupies a temporary building, but after July 1 it will move into a one-story brick structure 136 by 190 feet. The officers are: I. D. Shaw, president; George Fred Buechler, vice president; Joseph H. Smith, secretary.

**The Climber Motor Corporation**, Poteau, Okla., has incorporated with a capital stock of $1,000,000 for the purpose of manufacturing passenger cars, trucks and tractors. The incorporators are: W. F. Drake, C. E. F. Harris, David M. Boal, Ed. J. Doyle. The company plans to begin the construction of a modern plant. The main building will be 108 by 300 feet, driven by electricity. About 50 skilled mechanics will be employed. It will manufacture four and six-cylinder passenger cars.

**The Biggam Trailer Co.**, Corunna, Mich., has reorganized as the Biggam Trailer Corporation and has secured an order for trailers from the government. H. F. Biggam is president. New additions to the directorate include: James M. Carples, Roy C. Bailey, John T. McCurdy.

**The Dort Motor Car Co.**, Flint, Mich., received a war order for 1700 trailers of the two-wheel type. Delivery will be made about May 1.

**The Mason Tire and Rubber Co.**, Canton, O., will manufacture solid tires besides its pneumatic. It is expected that the new department will be turning out 100 solid tires a day by Jan. 1, 1919. In addition, the company will make the Kent tire, which will be manufactured exclusively for some of the largest jobbers in the United States.

**Baker Steam Motor Car and Manufacturing Co.**, Pueblo, Col., is erecting the first unit of its plant. The building will be 140 by 130 feet. The company has purchased 80 acres of land and will add other buildings as production increases.

**Conestoga Motor Truck Co.** has purchased a plant at Lancaster, Pa., and will establish its offices on the second floor of the building and conduct manufacturing operations on the first floor. In another section of the city the company owns 17 acres, on which it is preparing to erect a group of factory buildings.

**Hebb Motors Co.**, Lincoln, Neb., has increased the capital stock to $1,000,000. The company plans to erect a plant at Havelock, Neb., and will remove its machinery and equipment there. The first factory will be two stories in height, 240 by 400 feet. It is preparing for the manufacture of a truck.

**The Erd Motor Co.**, Saginaw, Mich., is erecting an addition to its factory. This will add 48,000 square feet of floor space to the plant. The addition will be 404 by 121 feet and will provide facilities for the increased production necessitated by the manufacture of the new tractor engine which the company will produce.

**Mixrite Carburetor Co.**, Decatur, Ill., has increased its capital stock from $30,000 to $75,000 and will enlarge the capacity of its plant.

**Detroit Auto Dash Co.**, Detroit, Mich., has completed its new plant. The buildings are brick and concrete and cover 25,000 square feet. The company expects to double its present production of 20 car loads per day.

**The Hayes-Ionia Body Co.**, Grand Rapids, Mich., plans the erection of a three-story addition to its plant. The new building will be 230 by 100 feet.

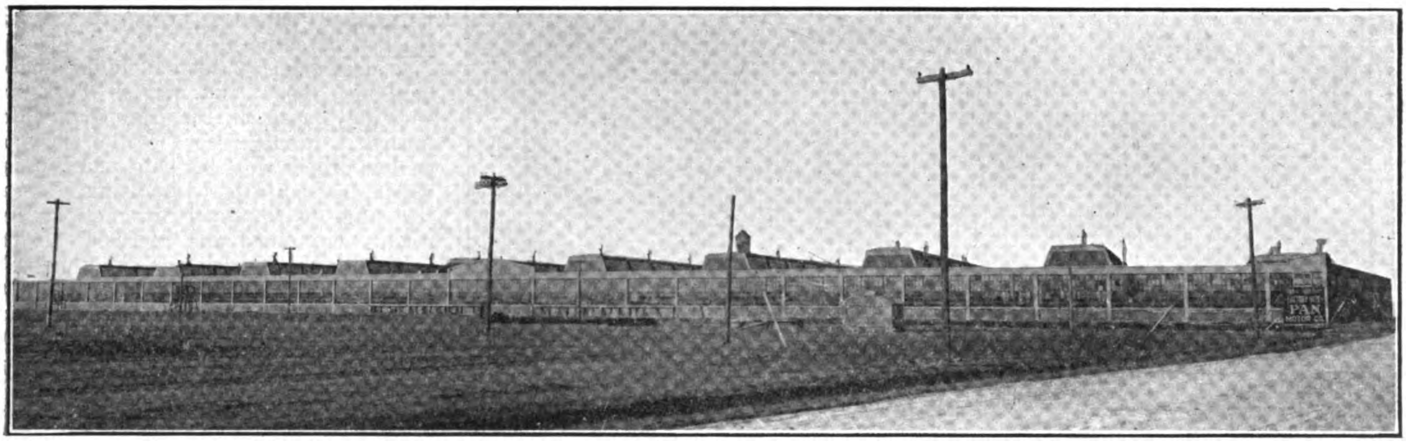
**The Whiting Motor Co.**, 1802 Broadway, New York City, with a branch at 352 Central avenue, Newark, N. J., has been appointed distributors of International motor trucks in Greater New York and Essex county, N. J. The Whiting Motor Co. is a well established and a well known concern and has been in business in New York City and Newark, with fully equipped sales and service stations. The International trucks are built by the International Harvester Corporation in seven models and four capacities, including three-quarter, one, 1½ and two tons. The Whiting Motor Co. is equipped to supply International motor truck chassis with a type of body suitable for every business requirement.

**The Anderson Electric Specialty Co.**, Chicago, Ill., is moving into its new factory quarters at 118-124 South Clinton street, and with the new facilities the production capacity will be trebled. The company manufactures electric lighting specialties, automobile accessories and dental supplies. The feature of the accessory line is the Autoreelite combination and dirigible searchlight and automatic extension "trouble light."

**The Champion Spark Plug Co.**, Toledo, O., during 1917 manufactured 24,000,000 spark plugs. The month of December was the most productive month with a total of 2,500,000. The company during the coming year intends to double its capacity.

**The Pan Motor Co.**, St. Cloud, Minn., has occupied its new factory building, which is 624 feet long by 170 feet wide. It is built of reinforced concrete and of the monitor roof design, affording light in every square foot of floor space. The work of moving machinery is nearly completed. The building will be used as the principle assembly unit. It is of the most modern type of factory construction and when completely equipped will have a capacity of about 100 assembled cars a day. The company is planning the construction of another factory unit of about the same size. Factory building one is being used for experimental work. The power plant is nearly completed and should be in operation within a short time. The foundation is being laid for the heavy machinery for the drop forge plant, which will be ready about July.

**The Lauchin Air Starter and Tire Inflator Co.**, Green Bay, Wis., has been organized to manufacture air starters, tire inflators and tire pumps. It is planned to produce 500 starters as soon as the factory can be equipped. The company is capitalized for $50,000. The incorporators are: Joseph F. Rotheis, president; Anton Loehr, vice president; R. B. Vockery, secretary; John J. Madler Hilbert, treasurer, and George Y. Lauchin, manager.



**Recently Completed Plant of the Pan Motor Co., St. Cloud, Minn., 624 Feet Long by 170 Feet in Width. When Completely Equipped Will Have Capacity of 100 Assembled Cars a Day.**

**The Union Truck Co.**, Bay City, Mich., is planning to expand to $1,000,000. A few years ago the company was organized with a capital of $50,000 by H. E. Buck, a leading stockholder, and H. P. Woodruff, general manager. Two new models are to be made.

**The McFarlan Motor Co.**, Connersville, Ind., has increased the prices of the McFarlan cars as follows: The two and four-passenger roadsters, six and seven-passenger touring cars and five-passenger "Pasadena," all formerly listed at $3750, are now $3900; the "Destroyer" four-passenger touring car, formerly $3750, is now $4150; the town car, the sloping "V" sedan, formerly $4600, are now all $5000; the Philadelphia Berline and the Continental landaulet, both formerly $4900, are now $5300; the seven-passenger cabriolet, formerly $5250, is now $5640, and the limousine, formerly $4650, is $5050.

**The Standard Crucible Steel Co.**, Milwaukee, Wis., is erecting a foundry addition, 40 by 50 feet. This was made necessary to increase its casting production to the point required by its unfilled orders. The additional facilities will be available about the middle of May.

**The Greenfield Tap and Die Corporation**, Greenfield, Mass., has issued a revised edition of catalogue No. 38, showing the complete line of pipe tools made by the various divisions of the company. It also contains a history of the organization and miscellaneous tables of information, such as drill sizes for pipe, taps, standard dimensions, conduit sizes and wire specifications.

**The Onguard Auto Necessities Co.**, Detroit, Mich., has moved from its old location at 982 Woodward avenue to new quarters in the office of the Hayes Manufacturing Co., at 458 Maybury Grand avenue.

**The Kaenjay Sales Co.**, New York, N. Y., has entered the general jobbing business and has three men traveling. covering New England, New York, Pennsylvania, New Jersey, Delaware and Maryland.

**The Anderson Motor Co.**, Rock Hill, S. C., has been awarded a contract for the Federal government to construct 200 aviation trucks at a cost of $35,000.

**The Continental Motors Corporation**, Muskegon, Mich., is working day and night shifts on a government order for class B truck engines. The company now employs more than 3500 men in order to rush this work to completion.

**The Olds Motor Works**, Lansing, Mich., will increase the price of its eight-cylinder open models. The present price of $1495 will be increased to $1550. Prices of the six-cylinder will probably remain unchanged, the open models listing at $1195, the coupe at $1595 and the sedan at $1695.

**The Columbus Tractor Co.**, Columbus, O., has been organized with a capital of $1,000,000 to manufacture farm tractors. The concern is a reorganization of the McIntyre Manufacturing Co., which has been in operation for several years and which has been manufacturing a tractor called the Farmer Boy. The first unit of the plant on Goodale street has been completed and a tract containing 10 acres has been acquired. This tract has railroad facilities and the present plant has a floor space of 40,000 square feet. Foster Copeland will be president and Marion McIntyre will be general manager. The company is now making 10 complete tractors daily and the production will be increased gradually to make the total 7500 in 1919. The tractor is three-wheeled, equipped with a Waukesha engine, 3¾x5½, and developing 25 horsepower.

**The Madison Motor Co.**, Anderson, Ind., has leased part of the plant to the Fulton Tractor Co., recently incorporated for $1,000,000. The production of tractors will be undertaken at once.

**The Hawkeye Truck Co.**, Sioux City, Ia., is erecting a new building which will give a capacity of from 660 to 800 trucks a year. The building will be completed about June.

**The Myers Machine Co.**, Sheboygan, Wis., manufacturing commercial cars, is completing the arrangements for largely increasing its output to handle domestic commercial orders. A new model of 2½ tons capacity is now in production.

**The Wohlrab Gear Co.**, Racine, Wis., has completed arrangements for the establishment of a factory at Racine, Wis. The output will then be greatly increased. Formerly it was conducting its manufacturing operations in part of the former plant of Wisconsin Engine Co.

**The Sectional Tire and Rubber Co.** is establishing a plant at Muskegon Heights, Mich. It is capitalized at $50,000 and G. A. Kitterman is manager.

**The Chandler Motor Car Co.**, Cleveland, O., reported profits of $3,284,172 from its 1917 operations. This is an increase of $846,310 over the previous year. Other income brought last year's total earnings up to $3,277,715, from which was deducted $895,312 for depreciation, etc., leaving a surplus before excess profits taxes of $2,382,403, equal to $34.03 a share on $7,000,000 capital stock, compared with $24.51 a share earned in 1916. The gross sales of the company last year increased 29.16 per cent. over 1916. F. C. Chandler in the report said: "The year's increase in sales and profit and the financial condition of the company are particularly gratifying in view of the disturbed general conditions of the country.

# *New Boston Station for Motor Parts Company*

## New England Headquarters Has Elaborate Equipment and Facilities for Distribution and Service Work

**New Headquarters of Boston Branch of Motor Parts Co. at 104-06 Brookline Ave. Sales and Service Station for Bosch Products, Westinghouse Lighting and Starting Systems for Fords, Zenith Carburetors and Columbia Batteries.**

THE opening of the new Boston headquarters of the Motor Parts Co. of Philadelphia with new and modern equipment in every respect is of interest to motor car owners, dealers, garage and supply men alike, as this company acts as distributors as well as service agents in New England for many of the best known and most widely used automobile equipment products.

Motor Parts service now practically covers the eastern seaboard, as in addition to the big new main headquarters station at Philadelphia, 847-49 North Broad street, Philadelphia, and this new station in Boston, there are also well stocked and fully equipped distributing and service stations at 1789 Broadway, New York City; 143 Chestnut street, Springfield, Mass., and at 1064-6 Main street, Buffalo, N. Y.

Efficient, reliable and prompt service was the trade slogan adopted by the Motor Parts Co. when it started in business and that this policy was strictly adhered to throughout its business dealings with the public, finds no stronger proof and substantiation than in the fact of the company's rapid growth and expansion throughout the eastern states.

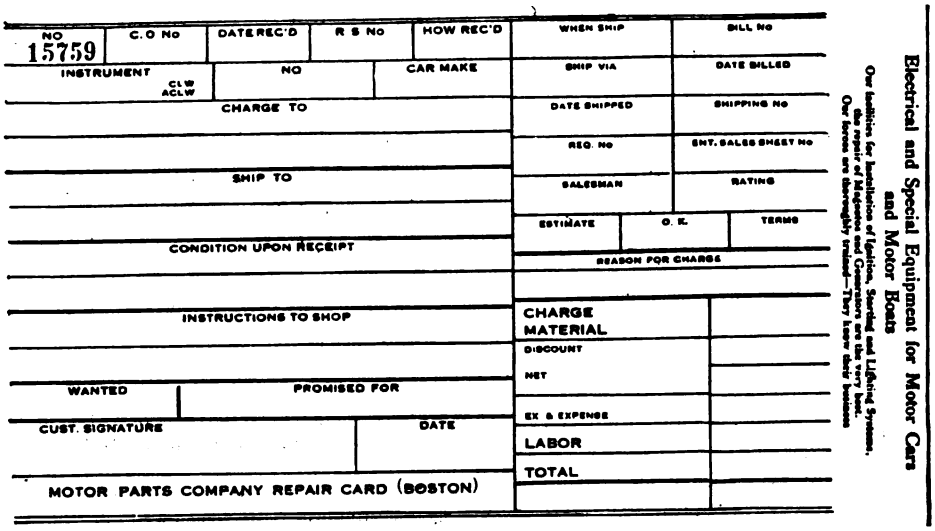
The company started business in Philadelphia seven years ago and the headquarters, which is still maintained there, was recently moved into a new building at 847-9 North Broad street, with 25,000 feet of floor space. About a year after the company was founded a branch was established in Boston under the management of Fred W. Wilkening, who is now secretary-treasurer of the company. This branch was opened at 185-7 Columbus avenue with space on two floors and about 3000 square feet of floor space was occupied and five men comprised the entire force at that time. The force had to be increased from time to time and early in the past year it became evident that larger quarters were necessary. The three-story building with basement at 104-06 Brookline avenue was leased late in the year and the new headquarters occupied about the middle of January. The two upper floors were rented, the ground floor and basement, with approximately 10,000 square feet, or three times the room formerly occupied, being sufficient to house the company's activities for the present at least. The upper floors, however, have been let on terms that will enable the Motors Parts Co. to occupy them when business requires it and the management feels confident that not many years will elapse before the entire building, or about 20,000 square feet, will be needed to meet the constantly expanding demands for more stock room, service space and repair department.

In front on the main floor there is a spacious business room, extending the full width of the building. A large receiving and business counter runs nearly the entire length just in front of the partitions, walling off the stock room and business offices, the latter occupying the major portions of the main floor in the centre at the left side, and the stock room occupying a similar space on the right side. The receiving and shipping room are conveniently located at the rear of the stock room and have an entrance opening directly onto the alley at the rear of the building, which arrangement makes it possible to drive the service car into the building where the parts and supplies are received and stocked or shipped.

A most efficient, yet simple, system of handling repair and service work has been developed by the company, which insures a proper record of the work, as well as proper workmanship, and through which the cause of any mistakes or errors due to improper instructions can readily be traced and rectified. If the instrument to be repaired or adjusted is received over the counter a check with a number is torn from the instruction card and given as a receipt. If the instrument is received by express a similar card is made out. This card while only five inches wide and 11 inches long carries all the information about the instrument or part from the time it arrives until it leaves the station and tallies all the work done on it, as well as showing reasons for repair, nature of repair and reasons for extra charges if they are necessary in case of service work. The accompanying cuts showing both sides of the card, with its complete and exhaustive detail for itemizing every record and the information concerning the instrument or part.

On the reverse side of the card is the shop report, which when filled out not only tells everything that has been done to an instrument or part, its condition when received and when completed, but also the nature of the work done on the job, time required and all material used. A glance at this card will show how readily the cost of a job can be arrived at and the completeness of the report that could be made if necessary as to every detail of the work.

The stock room is divided into sections, each devoted to one of the company's lines. The stocks carried on these lines is the largest of any in New England on the respective parts or equipment, and they are very complete. The most interesting of these stocks is that in the magneto department, which



NO 15759 | C. O No | DATE REC'D | R S No | HOW REC'D | WHEN SHIP | BILL No

INSTRUMENT CLW ACLW | NO | CAR MAKE | SHIP VIA | DATE BILLED

CHARGE TO | DATE SHIPPED | SHIPPING No

REQ. No | ENT. SALES SHEET No

SHIP TO | SALESMAN | RATING

ESTIMATE | O. K. | TERMS

CONDITION UPON RECEIPT | REASON FOR CHARGE

INSTRUCTIONS TO SHOP | CHARGE MATERIAL

DISCOUNT

NET

WANTED | PROMISED FOR

EX & EXPENSE

CUST. SIGNATURE | DATE

LABOR

TOTAL

MOTOR PARTS COMPANY REPAIR CARD (BOSTON)

Electrical and Special Equipment for Motor Cars and Motor Boats

Our facilities for installation of Ignition, Starting and Lighting Systems, the repair of Magnetos and Generators are the very best. Our forces are thoroughly trained—They know their business

The Front of the Repair Card, Showing Means of Tallying All Information Necessary to Insure Proper Handling, Inspection and Repair on Any Instrument or Part Received for the Service and Repair Department.

of course, is natural, as the Bosch products head the Motor Parts line and the big repair shop at the rear of the station is equipped for repair and service work on these instruments. In addition to a big line of new magnetos and all their parts, there is also kept quite a number of these instruments that are now out of manufacture and they serve an invaluable purpose, as there are still hundreds of these old types which from time to time are brought in for repair and needed parts are taken from these machines carried in stock.

Installation of Bosch equipment on battery-operated cars is another branch of the station's work in which there has been great activity this season. There is every prospect of a great demand for these installations this year, as thousands of cars will be retained and operated by owners that would have been exchanged for new ones had not the curtailment of production gone into effect. This fact will also be responsible for an abnormal demand for other equipment which the compauny handles, and there is every prospect that the new quarters will soon be operated to their full capacity in every department.

A more ideal location than that occupied by the company in Boston would be hard to find, as the building is in the heart of the Hub's great automobile section, several minutes walk from the junction of Commonwealth and Brookline avenues and Beacon street, the centre of the automobile business in New England.

While the new Boston branch is equipped for every service that can be rendered, a prospective purchaser or user of any of the various things for which the company acts as dstributor—and in this connection it might be said that as to Bosch products the service as far as repairs and supplies is concerned is equal to that to be obtained at the factory—there are nearly a dozen subagencies of the branch located throughout New England for the convenience of patrons, which are not only thoroughly equipped to give service on Bosch products, but also on Zenith carburetors, while some handle and give service on all the equipment handled by the Motor Parts Co. These various sub-agencies, which are convenient to practically every point throughout the New England territory, are located as follows:

Connecticut: Robert R. Ashwell, 347 Trumbull St., Hartford, Conn.; The Geo. B. Wuestefeld Co., 204 York St., New Haven; The Garlock & Haynes Co., 108 Main St., New London; Brook St. Garage, Brook St., Waterbury.

Maine: A. L. Ebbeson, Bangor.

Massachusetts: J. E. Newton, Co., Fall River, Mass.; Hart's Garage, Gloucester, Mass.; Auto Electrc Service Station, 660 Pleasant St., New Bedford, Mass.; Morgan & Powers, Inc., Worcester, Mass.

New Hampshire: Ernest E. Austin, Manchester.

Rhode Island: American Ball Co., Providence.

Other representatives will be established during the coming year which will add materially to the list of sub-stations or agencies where the people of New England can find well stocked supplies of the Motor Parts Co.'s line, as well as efficient service.

Mr. Edward Wilkening, brother of Secretary Wilkening of the company, is the manager of the Boston branch and has associated with him several men whose long service in connection with the Bosch products and popularity in the trade should be a guarantee to customers of the very highest quality of workmanship, service and treatment. Samuel Uswald, assistant manager, was for nine years with the sales, service and advertising departments of the Bosch company, and Jack Goethe, the service manager, was formerly service manager at the Bosch New York factory and service station. The men in the overhaul and repair department are practically all factory trained men.

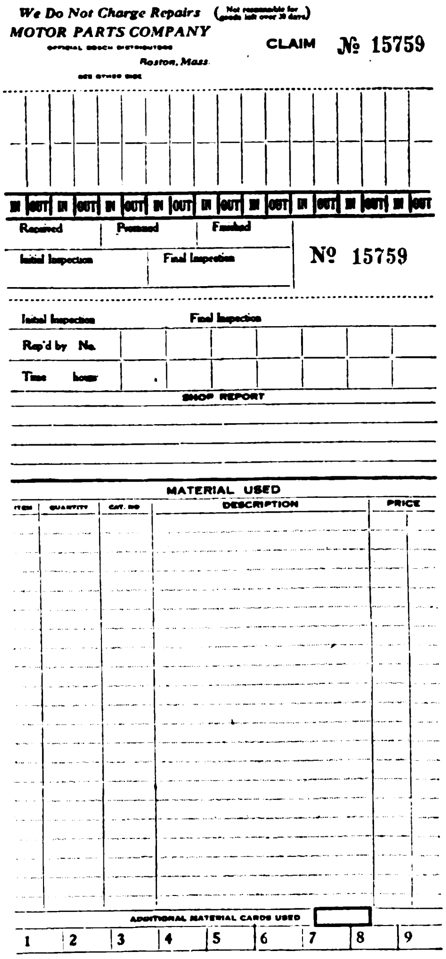
This organization acts as the New England distributor and gives service on all the lines carried by the Motor Parts Co., which includes all Bosch products—magnetos, dynamos and starting motors, Zenith carburetors, Westinghouse-Ford starting systems, Norma ball bearings, Solar automobile lamps, MP cable for starting, lighting and ignition systems, and is general distributor for Federal Mazda lamps, starting motor and generator brushes, fuses and other parts and Mosler spark plugs, carrying the largest stock of the latter in New England. Wire wheels, Mohawk tires and Columbia storage batteries are also included in the M-P line. While the distributing, installation and service on this line is the company's specialty, the equipment in the repair and service rooms is of character enabling them to handle work on any make of electrical systems for automobiles, trucks, motorcycles or boats.

## ECKENRODE SALES MANAGER OF FULLER & SONS MFG. CO.

Fuller & Sons Manufacturing Co. announce the appointment of J. E. Eckenrode as their district sales manager, with headquarters at 1512 Kresge building, Detroit, Mich. Mr. Eckenrode has been with the automobile industry eight years.

## ADVANCE FOR FORD PARTS.

The Ford Motor Co. has announced that an increase in the price on a number of Ford parts went into effect on April 1.



*We Do Not Charge Repairs* (Not responsible for goods left over 30 days)
*MOTOR PARTS COMPANY*
OFFICIAL BOSCH DISTRIBUTORS
*Boston, Mass.*
SEE OTHER SIDE

CLAIM № 15759

IN | OUT | IN | OUT | IN | OUT | IN | OUT | IN | OUT | IN | OUT | IN | OUT | IN | OUT | IN | OUT

Received | Promised | Finished

Initial Inspection | Final Inspection

№ 15759

Initial Inspection | Final Inspection

Rep'd by No.

Time hours

SHOP REPORT

MATERIAL USED

ITEM | QUANTITY | CAT. NO | DESCRIPTION | PRICE

ADDITIONAL MATERIAL CARDS USED

1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9

Reverse Side of Card for Inspectors and Shop Report.

# *Government Takes Over Bosch Plants*

**Output Will Be Largely Used by Airplane Service, Navy and Other Federal Branches.**

The government has taken over the big plants of the Bosch Magneto Co. at Springfield, Mass., and Plainfield, N. J., and directors will be named by Alien Property Custodian Palmer to conduct their operations. Investigation showed, it was announced today, that the company is entirely owned by German interests.

The move has been under contemplation for some time and a thorough investigation has been made of the concern's affairs. While the company is capitalized at only $75,000, its real valuation, it is said, is about $7,000,000. The company's output, it is announced, will be used largely by the airplane service, the navy and other branches of the government.

Admission was made here by C. L. Schurz, temporary president of the Bosch Magneto Co., taken over by the government, that all its stock is owned in Germany. Mr. Schurz, who is an American citizen, formerly was counsel and secretary of the company, and succeeded Otto Heins, a German subject, who resigned as president in April, 1917. Mr. Heins is still in this country, but not connected with the concern, according to Mr. Schurz.

The Bosch Magneto Co. plant erected at Springfield, Mass., in 1911, is the larger of the two taken by the government. It employs about 900 persons. The plant is one of the largest in the world devoted to manufacture of magnetos. Formerly a large number of German officials were connected with the concern, but some 125 positions of more or less authority resigned. Most of these have formed a colony in Southwick, a few miles from the city of Springfield. Stock of the company has never been offered to the public.

## WISCONSIN AUTO TOP CO. MAKES BADGER SEAT COVERS.

For some time dealers throughout the country, impressed with the quality of the well known brand of Badger seat covers, and with the profitable business established on these products, urged the Wisconsin Auto Top Co. of Racine, Wis., to manufacture a tire cover of the same quality. As the constantly increasing demand for Badger seat covers taxed their production capacity to the limit, it was impossible for the company to give attention to other lines.

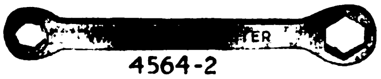
The completion of the new modern factory, now under course of construction, will at last enable the Wisconsin Auto Top Co. to broaden its activities and place upon the world a high class line of tire covers.

Announcement to that effect will, without doubt, be welcomed by the trade. It will be good news to know that Badger Seat Cover satisfaction to both seller and user can now be had on Badger tire covers.

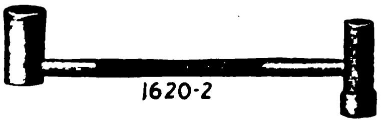
Dealers interested in procuring tire covers should get in touch with the Wisconsin Auto Top Co. at the earliest possible moment, for from present indications they will soon have orders taxing the capacity of the plant to its utmost.

## SPECIAL WRENCHES FOR FORD CARS.

These steel socket wrenches have been tried out by garage repair men and Ford owners. They have been found to be most efficient tools—especially useful in getting at nuts and bolts inaccessible to ordinary open-end or monkey wrenches.

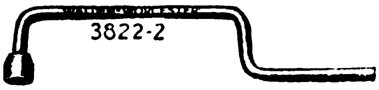


The ratchet wrench with an 11/16 inch hexagonal opening was particularly designed for use on transmission bands (brake and reverse), Ford car. The opposite end, 15/16 inch, is for use on Champion X spark plugs and slow speed connecting lock. This is a combination tool which has been found to be most serviceable. The price of this tool is 90 cents.



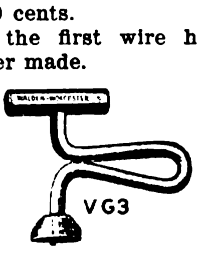
The Triple Socket Wrench is really three wrenches in one. The socket sizes are ⅝ inch and 1⅛ inch hexagon and 9/16 inch square. This is our new improved "Tomahawk" wrench.

The double end socket has been designed particularly for clearance around cylinder head bolts and other places. Used on cylinder head, brake and reverse support, cylinder inlet and outlet connections, differential case, drive shaft roller bearing, front spring tie, spring, run board fender, rear axle housing, crank case (lower cover), controller shaft bracket and 9/16 square socket on main bearing bolt head. The price of this tool is 60 cents.

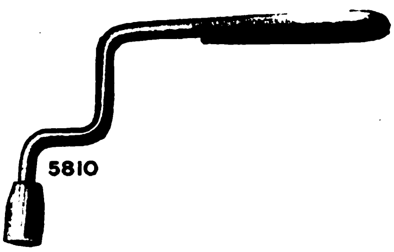


The special type wire handle wrench is used on flywheel cap screws, Ford car: heretofore considered an impossible place for a socket wrench. It is an ugly place made easily accessible. The socket size is 11/16 inch hexagon. It sells for 50 cents.

This is the first wire handle valve grinder ever made.



The all-steel wire handle valve grinder has a ⅝-inch bar handle which swivels on a cone bearing. The socket is shaped to fit valve heads and is fitted with hardened steel pins. The valve grinder sells for 45 cents.



Wrench No. 5810 is a specially designed connecting rod wrench. It fits all connecting rods on a Ford car—including the fourth connection. This is the original design—the first wrench made to reach the fourth connection without removing the engine from the car. It sells for 45 cents.

**Manufactured by the Walden-Worcester Inc., Worcester, Mass. Write for catalogue.**

## NEEDLESS CORRESPONDENCE WITH THE GOVERNMENT.

Owing to the enormous increase of government war work, the governmental department at Washington is being flooded with letters of inquiry on every conceivable subject concerning the war, and it has been found a physical impossibility for the clerks, though they number an army in themselves now, to give many of these letters proper attention and reply. There is published daily at Washington, under authority of and by direction of the President, a government newspaper—The Official U. S. Bulletin. This newspaper prints every day all of the more important rulings, decisions, regulations, proclamations, orders, etc., as they are promulgated by the several departments, and the many special committees and agencies now in operation at the National Capital. This official journal is posted daily in every postoffice in the United States, more than 55,000 in number, and may also be found on file at all libraries, boards of trade and chambers of commerce, the offices of mayors, governors and other Federal officials. By consulting these files most questions will be found readily answered; there will be little necessity for letter writing; the unnecessary congestion of the mails will be appreciably relieved; the railroads will be called upon to move fewer correspondence sacks, and the mass of business that is piling up in the government departments will be eased considerably. Hundreds of clerks, now answering correspondence, will be enabled to give their time to essentially important war work, and a fundamentally patriotic service will have been performed by the public.

## WILT PLANT SOLD TO DODGE.

John G. Dodge of Dodge Brothers has purchased the plant of the Wilt Engineering Co., Detroit, Mich. He is reported to have paid $115,000 for the property.

# NEW AGENCIES RECENTLY APPOINTED.

Add to and Correct Your Mailing List of Pleasure Car and Other Dealers—Symbol * Indicates Commercial Vehicle. †Electric Vehicle.

### ARKANSAS.

**Little Rock**—Maxwell, United States Auto Co., 20th and Main Sts.
*Maxwell, United States Auto Co., 20th and Main Sts.

### ARIZONA.

**Phoenix**—*Republic, The Southern Motor Co., 337-341 Washington St.

### CALIFORNIA.

**Eureka**—Velie, H. A. Hine.
**Lodi**—Saxon, J. B. Cathcart.
**Marysville**—*Bethlehem, The Benham Motor Sales Co.
**Modesto**—Liberty, Snapp & Peterson.
**San Francisco**—King, The Leach-Frawly Motor Co., 1417 Van Ness Ave.
Mitchell, The Leach-Frawly Motor Co., 1417 Van Ness Ave.
Nash, The Du Bray Motor Co.
*Nash, The Du Bray Motor Co.

### CONNECTICUT.

**New Haven**—*Atterbury, N. B. Whitfield.

### DISTRICT OF COLUMBIA.

**Washington**—*Little Giant, Forst Bros., Inc., 1315 New York Ave.

### ILLINOIS.

**Belvidere**—Mitchell, The Collier Co.
**Cairo**—KisselKar, Jackson Motor Car Co.
**Chicago**—Nash, The Western Motor Car Co.
**Decatur**—Chalmers, Service Motor Sales Co., 429 East William St.
**Jacksonville**—Franklin, The Hass Electric and Mfg. Co., 314 State St.
Reo, The Hass Electric and Mfg. Co., 314 State St.
Winton, The Hass Electric and Mfg. Co., 314 State St.
†Milburn, The Hass Electric and Mfg. Co., 314 State St.
*Reo, The Hass Electric and Mfg. Co., 314 State St.
**Springfield**—Hupmobile, W. D. Booth, 121 North Fourth St.
**Waukegan**—Nash, Charles E. Baristow.

### INDIANA.

**Lafayette**—Chandler, I. L. Galbraith, 831-833 Main St.
Nash, I. L. Galbraith, 831-823 Main St.
Paige, I. L. Galbraith, 831-833 Main St.

### IOWA.

**Burlington**—Cadillac, The B. F. Forbes Sales Co., 317 N. Sixth St.
**Iowa City**—Dodge Bros., L. K. Kessler.
**Osage City**—Overland-Knight, B. K. McIllbray.
**Sioux City**—KisselKar, Watson Automobile Co.
*Overton semi trucks, The Waterman-Bard Truck Co.

### KANSAS.

**Asherville**—KisselKar, A. W. Shull & Son.
**Bucyrus**—KisselKar, L. A. Seck.
**De Sota**—KisselKar, F. Watson.
**Hanover**—KisselKar, Martin Heid, Jr.
**Hiawatha**—KisselKar, Mohler Bros.
**Home City**—KisselKar, N. L. Howell.
**Howell**—KisselKar, W. L. Howell.
**Hutchison**—KisselKar, Chalmers Motor Sales Co.
**Independence**—KisselKar, J. A. Byxbe.
**Glasco**—KisselKar, Charles Gehike.
**Montgomery**—KisselKar, Wilson & Dancer.
**Netawaki**—KisselKar, Johnson & Albright.
**Palmer**—KisselKar, R. H. Grom.
**Pittsburg**—KisselKar, C. & A. Auto Co.
**Randolph**—KisselKar, W. H. Hagermein.
**Riley**—KisselKar, Dullinga & Brown.
**Salina**—KisselKar, B. H. Gipton.
**Seneca**—KisselKar, M. F. & J. O. Thompson.
**Topeka**—KisselKar, J. F. Broughton.
KisselKar, Capital Auto & Supply Co.
**Waterville**—KisselKar, Joseph Green.
**Yates Centre**—KisselKar, C. C. Miller.

### LOUISIANA.

**Monroe**—KisselKar, S. C. Blackmon.
**New Orleans**—Roamer, The Motor Inn Garage.
**Welch**—KisselKar, Welch Garage, Inc.

### MASSACHUSETTS.

**Springfield**—Premier, The Gifford Motor Car Co., 23 Bowdoin Terrace.
Saxon, The Gifford Motor Car Co., 23 Bowdoin Terrace.
*Republic—The Gifford Motor Car Co., 23 Bowdoin Terrace.
**Worcester**—Liberty, F. G. Chandler.

### MICHIGAN.

**Battle Creek**—Franklin, Thomas Orrell & Co., 13 West Jackson St.
Oakland, Thomas Orrell & Co., 13 West Jackson St.
*Lane, Thomas Orrell & Co., 13 West Jackson St.
**Grand Rapids**—*Elcar, The Boulevard Auto Co.
*Panhard, The Boulevard Auto Co.
**Menominee**—National, John H. Vernet, Wistrand Block.
Nash, John H. Vernet, Wistrand Block.
Pierce-Arrow, John H. Vernet, Wistrand Block.
Winton, John H. Vernet, Wistrand Block.
†Rauch & Lang, John H. Vernet, Wistrand Block.
**Pontiac**—Hudson, E. W. Moore and C. E. Moore.
Maxwell, E. W. Moore and C. E. Moore.
Olympian, E. W. Moore and C. E. Moore.
**Ypsilanti**—Dort, Neuton Motor Sales Co., Michigan and Adams St.
Nash, Neuton Motor Sales Co., Michigan and Adams St.

### MINNESOTA.

**Cloquet**—*Buick, Thomas Meraw and William A. Gamble.
*GMC, Thomas Meraw and William A. Gamble.
GMC Tractor, Thomas Meraw and William A. Gamble.
**Granite Falls**—Overland. The Granite Falls Automobile Co., Nelson-Osmundson.
Paige, The Granite Falls Automobile Co., Nelson-Osmundson.
**St. Paul**—KisselKar, Minnesota Motor Sales Co., 237 West Ninth St.
**Villard**—Ford, Remington Bros., care J. F. Taylor's Garage.

### MISSOURI.

**Middleton**—Buick, John F. Uptogrove.
Oldsmobile, John F. Uptogrove.
**St. Louis**—Comet Six, The Neskow-Mumperow.
Liberty, The Briscoe Sales, 2921-23 Locust St.

### NORTH CAROLINA.

**North Wilkesboro**—Chevrolet, Smoak Bros.
Oldsmobile, Smoak Bros.
**Sanford**—KisselKar, A. G. Perry.

### OHIO.

**Elyria**—KisselKar, Elyria Auto Service Co.
**Lancaster**—Oakland, Frank Wright.

### OKLAHOMA.

**Haskell**—Overland, The McLain-Overland Co.

### OREGON.

**Medford**—KisselKar, W. R. DeLay.
**Portland**—Harroun, Lee L. Gilbert.

### PENNSYLVANIA.

**Easton**—*Koehler, J. S. Lerch.
**Kane**—KisselKar, Pierotte & Geary.
**Monessen**—*Dort, Arthur E. Bonary.
**Philadelphia**—*Atlas, The Stability Motors Co., 333 South Broad St.
*Atterbury, The Stability Motors Co., 332 South Broad St.
*Old Reliable, The Stability Motors Co., 333 South Broad St.
United Tractors and Trailers, The Stability Motors Co., 333 South Broad St.
**Washington**—KisselKar, J. M. Yeager.
**Yeagertown**—KisselKar, J. M. Yeager.

### SOUTH CAROLINA.

**Anderson**—KisselKar, John E. Sadler.

### SOUTH DAKOTA.

**Aberdeen**—Oldsmobile, E. P. Nelson, 414 St. Main St.

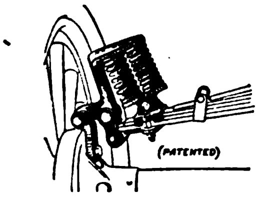
### WASHINGTON.

**Pullman**—Paige, Richmond & Hill.
Saxon, Richmond & Hill.
Westcott, Richmond & Hill.
**Spokane**—Garford, The Western Truck and Tractor Co.
*Garford, The Western Truck & Tractor Co.
**Tacoma**—Ford, Young & Wycoff.
Chalmers, Heath & Seeds.
Chandler, Heath & Seeds.
Hudson, Heath & Seeds.
Studebaker, Heath & Seeds.

### WISCONSIN.

**Appleton**—Nash, The Appleton Auto Co.
**Augusta**—Overland, Arthur Russell and Henry Kohnke, Lange building.
**Ashland**—Dodge Bros., Henry & White Auto Co., 317 West Third St.
**Chetek**—Ford, F. A. Richards and Elmer Anderson.
**La Crosse**—Maxwell, The Weikaupt Auto Co.
*Maxwell, The Weikaupt Auto Co.
Maxwell tractors, The Weikaupt Auto Co.
**Milwaukee**—Interstate. The Bursinger-Durkin Co., 622 Wells St.
Moon, The Bursinger-Durkin Co., 622 Wells St.
Dodge Bros., Gilbert V. Martin, Downer Ave. and Webster place.
KisselKar, Gilbert V. Martin, Downer Ave. and Webster place.
*Atlas, The Bursinger-Durkin Co., 622 Wells St.
**Washburn**—Buick, Trowbridge & Fox.
**Whitewater**—Buick, Walter Gnatzig.

ACCESSORIES
AND
EQUIPMENT



### CHAMPION SHOCK ABSORBER.

These shock absorbers are built exclusively for Ford cars and are designed to absorb the jar and recoil from the springs.

The pivot seat of the two coil springs act as a bearing for the main springs and allow free oscillation of the working parts. The car rides on the springs and off the springs, equalizing each motion in balance, making the action of one spring compensate for that of the other.

They are easily attached and require no attention when in use.

**The Champion Shock Absorber Sales Co., Indianapolis, Ind. Two for the rear wheels, $8; set of four, $15.**

### FLAMELESS COMBUSTION PLUG.

One of the late improvements in the gasoline motor field is the discovery that catalytic combustion will keep the carbon burned off the spark plug insulator on the smokiest engine, because it heats the insulator on the compression stroke before the air is fouled by the spent gas from the explosion.

The carbon and smoke is burned off the earthenware insulator, which is kept at a high temperature by heat produced in burning a part of the gas-air mixture by "catalytic flameless combustion" throughout all the time of the compression stroke of the engine, when there is always plenty of fresh air in the cylinder.

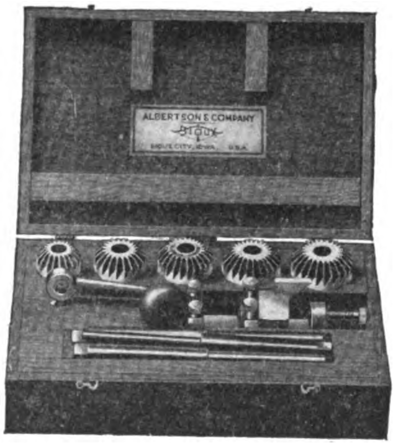
The Harding Non-Carbonizing Spark Plug is provided in addition to the electrodes and insulator with a catalytic structure, which produces heat by oxidizing part of the air-gas mixture in contact therewith by the catalytic method, which is entirely different from ordinary flame combustion, the kind that inflames or explodes the gas charge and produces power.

**Manufactured by the Flameless Combustion Spark Plug Co., Chicago. Write for prices.**

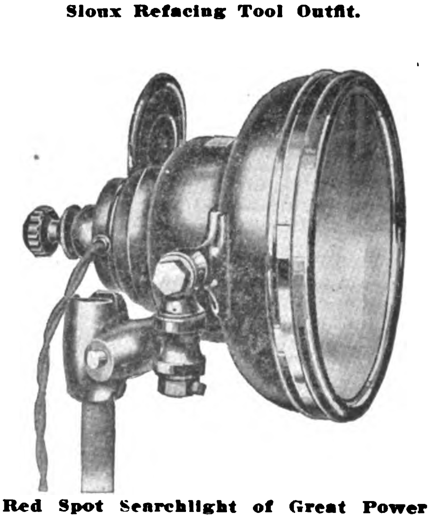
### SIOUX REFACING TOOL.

Doing a lot of unnecessary work all day long is the old way of grinding valves. You have a choice of making a necessary time charge that your customers are bound to kick on, or giving the job less time than it should have. With the Sioux way you fasten any valve of standard make into the Sioux Refacing Tool and in a shorter time by far than it takes with the old way you can turn out a quick and well finished job. The cutter is made of fine grade tool steel, hardened and tempered to stand real service. Cutters 30, 45 and 60 degree are 75 cents each.

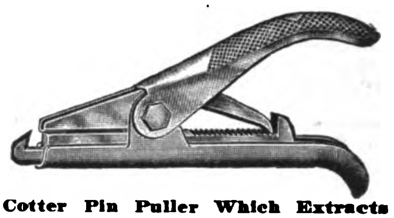
**Manufactured by Albertson & Co., Sioux City, Ia. Price of outfit complete with 45-degree cutter, $6.**



Sioux Refacing Tool Outfit.



Red Spot Searchlight of Great Power with Red and White Rays of Light.



Cotter Pin Puller Which Extracts Bent Pins and Retains Them in Its Jaws.

### COTTER PIN PULLER.

How many times have you strained to reach a cotter pin—probably located in some inaccessible place—and after spearing for it with a screw driver, either given up in disgust and nursed your bruised knuckles, or if you did get it out and dropped it into some vital part of the machine.

The May's Cotter Pin Puller was designed to get away from all this trouble. It reaches after the cotter pin, straightens it if bent and once taking hold, withdraws it in safety and holds it until released.

In a garage or repair shop where much of this work has to be done this tool will save much time and trouble.

The puller is well machined, mechanically correct and is finished with a heavy nickel plate to prevent rusting.

**Manufactured by the Brewer Titchener Corporation, Cortland, N. Y. Write for prices.**

### RED SPOT SEARCHLIGHT.

In addition to the beams of the headlight there often is need of a powerful spotlight for illuminating sign posts and for trouble shooting at night, while if one is to park the car in the evening it is advantageous to have a red light in front as well as in back.

The F. W. Wakefield Brass Co. has brought out a searchlight larger in size and of greater power than the average spotlight. It is seven inches in diameter and has a 30 candle power lamp. The operator of the car may flash either a white or red beam of light from the lamp by turning a switch, making it serviceable either as a spotlight or danger signal.

**Manufactured by the F. W. Wakefield Brass Co., Vermillion, O. Write for prices.**

## CUNO AUTO CIGAR LIGHTER.

The electric cigar lighter fills a much needed want on the motor car. The Cuno Auto Cigar Lighter is simple, efficient and reliable. The burner tip is made of heavy wire and will last indefinitely. It is equipped with six foot cord that automatically rewinds after being pulled out for use. It is finished in nickel and mounted upon the dash by drilling a hole 25/32 of an inch in diameter and inserting the neck from the rear of the dash and tightening nut. A resistance coil is furnished for use with cigar lighter on cars having either 12, 18 or 24 volt batteries. Connecting the battery wire to one end of the coil, connecting other end of screw on round fiber disc on side of the lighter and connecting the other screw to ground makes lighter ready for use.

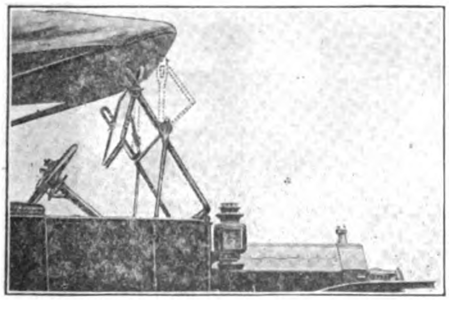
**Manufactured by the Cuno Engineering Corporation, Meriden, Conn. Write for prices.**

Cuno Cigar Lighter.

## BANKER WINDSHIELD.

Riding in the front seat of a Ford on a hot day, the discomfort due to the lack of circulation of fresh air, a rain storm makes it necessary often to put down the windshield on account of the inability to see the road ahead through the moisture accumulated on the glass, thereby subjecting the operator to the unpleasantness of getting wet.

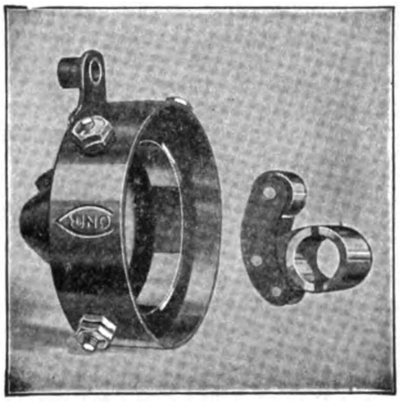
The Banker Windshield was designed to overcome these conditions. This attachment will convert a standard Ford shield into one that may be easily and quickly adjusted to many different positions. It is simple to replace the present hinges with a Banker attachment. The same screws and screw holes are used and the exchange can be made without even taking the windshield off the car. It can easily be done in a short time by anyone. The hinges are of the friction type and by a slight turn of the wing nuts the upper section of windshield can be adjusted to any position.



Banker Adjustable Windshield for Ford.

**Manufactured by the Banker Windshield Co., Pittsburgh, Pa. Price, $1.50 per set.**

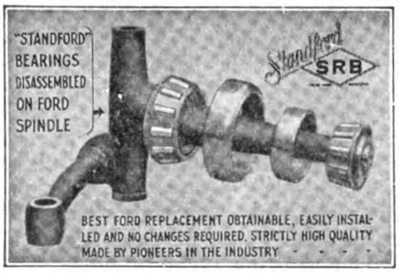
## THE CUNO TIMER.



The Cuno timer is designed to meet the demand for a high class, well built timer for replacement on Ford cars. It is made of light weight steel and is practically indestructible. It is finished in black enamel. The construction is such that it can be attached to any model T Ford car without any change. Constant lubrication is affected by splash from an oil well formed by the groove behind the fiber ring, which is filled occasionally through the oiler. The roller assembly is light, simple and strong. The roller and pin are made of special steel and are hardened.

**Manufactured by the Cuno Engineering Corporation, Meriden, Conn. Price complete, $1.50.**

## S R B STANDFORD BEARINGS.


"STANDFORD" BEARINGS DISASSEMBLED ON FORD SPINDLE
Standford
SRB
BEST FORD REPLACEMENT OBTAINABLE, EASILY INSTALLED AND NO CHANGES REQUIRED. STRICTLY HIGH QUALITY MADE BY PIONEERS IN THE INDUSTRY

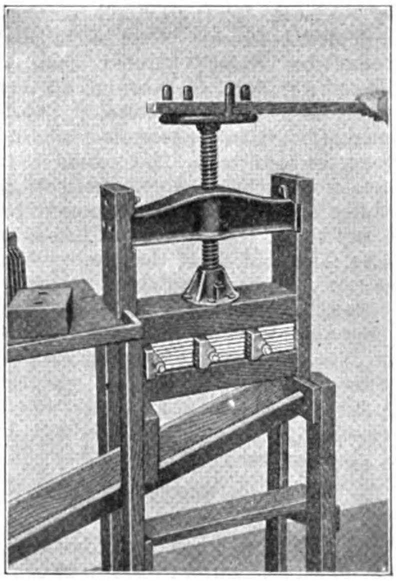
This new member of the S R B Taper Bearing family is a strictly high-grade bearing in every particular of design, material and workmanship. It is produced from the highest grade of chrome alloy steel, is made with the same care as the regular S R B Taper Roller Bearings and will give the same high degree of service and satisfaction. It is a bearing that absolutely prevents the rollers from going out of line. Race and cone are ground and the rollers cut to a perfectly true taper, making the bearing run freely. It is easily installed and will withstand strains that tend to destroy the regular bearings.

**Manufactured by the Standard Roller Bearing Co., Philadelphia, Pa. Write for prices.**

## AMBU PLATE PRESS.

The negative plates of the storage battery quite often require pressing on account of the bulging of the active material and to straighten the grids should they buckle. The Ambu Plate Press was devised for this purpose. There are no metallic sections that can be reached by the dripping acid and whatever acid that is squeezed from the plates is run through a trough into a receptacle so that no injury is done to the floors. It will press three groups of plates at the same time.

**Manufactured by the American Bureau of Engineering, Chicago, Ill. Price, $32.50.**

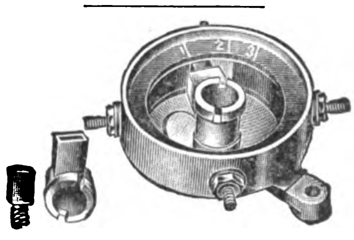


Ambu Press for Straightening and Compressing Battery Plates.

## "HYWAY" OILLESS TIMER.

This timer is developed on the system of brush contact used on all electric generators. The brush is special machined of hardened brass, slightly curved to fit the ring. It can be quickly and easily renewed when worn and is the only part necessary to be changed. This timer does not need to be oiled and gives a 50 per cent. longer contact, insuring a fat spark, which makes for better ignition. The shell is made of stamped steel wth a black enameled finish and the fiber is bone dry, hardened to give the most wear. It will not absorb oil.

**Manufactured by the Hyway Manufacturing Co., Chicago, Ill. Price, $1.25.**



Ford Oilless Timer.

TELL-TALE
TRADE MARK
PISTON RINGS

### TELL-TALE PISTON RING.

There has always been more or less trouble from excess carbon formation and oil escapement into the explosion chamber of gasoline engines. To prevent this excess of oil leakage and to decrease liabilities of leakage past the pistons, the Tell-Tale Piston Ring has been designed.

This ring is made of a metal which is capable of withstanding a great heat without losing its tension. Each ring is individually cast and retains its scale or resilient strength when finished. Around the outside is turned a shallow groove, or wiping chamber, that is designed to collect any surplus oil and allow it to escape into the crank case through vertical channels cut in the groove at intervals. The turned wearing surface enables it to seat itself more readily and it quickly becomes adjusted to any slight irregularity of the cylinder walls. The joint is of the familiar square lap type, in effect two rings but only one casting.

**Manufactured by the Vulcan Machine and Tool Co., St. Louis, Mo. Write for prices.**

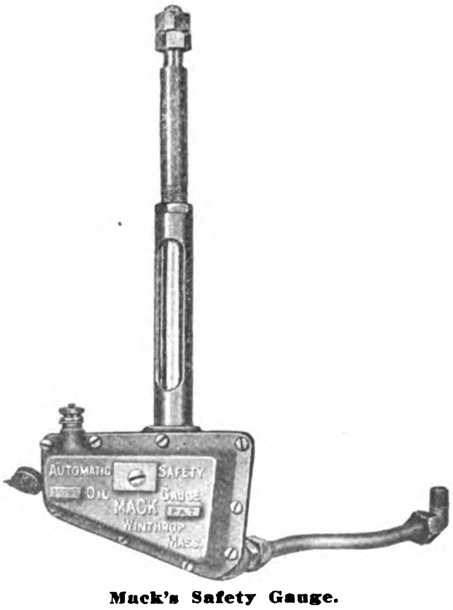
### AUTOMATIC SAFETY OIL GAUGE.

Lack of lubrication is one of the greatest sources of trouble in an automobile, causing scored cylinders, burned out bearings and injury to other moving parts. This will result in lack of power and a noisy engine, and eventually in a large repair bill.

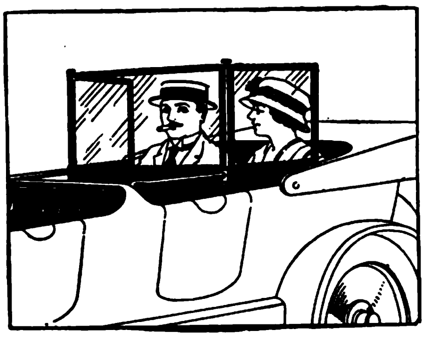
The oil gauge on the side of the Automatic Safety Oil Gauge is readily seen and shows the amount of oil in the oil reservoir. If for any reason the reservoir fails to be filled or through a leak the oil is lost, this instrument will stop the engine before it reaches the point where lack of oil will cause serious damage. It is only necessary to add enough oil to the reservoir to bring it back to a safe lubricating point. This device works automatically and the makers claim it never fails to work.

This device is a complete insurance and one that a motor car owner cannot afford to be without. It insures the proper lubrication of the engine at all times, thus giving the full efficiency at all times. It can be installed in an hour's time without making any change in any part of the engine or car and once properly installed requires no attention.

**Manufactured by the McMurray Specialty Co. Distributed by J. Stuart Ring, 14 State street, Boston, Mass. Write for prices.**



Mack's Safety Gauge.



### "J. H." TONNEAU SHIELD.

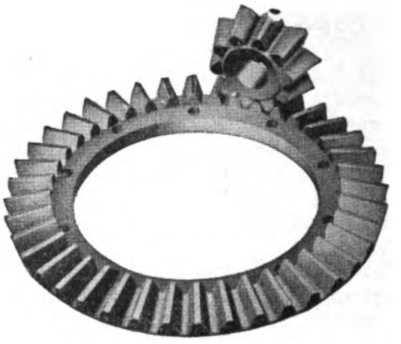
The "J. H." Tonneau Shield is adaptable for use on any car built and is simple, durable and dependable. The shield consists of a main frame with two folding wings fitted with glass. It is mounted on a pair of extending steel arms, which are attached to a pair of steel body irons, which in turn fasten securely to the frame of the front seat beneath the upholstery. When once raised a push enables one to open or close the shield and place in whatever position desired, whereupon it is held by the friction locks. The side wings are simply turned to whatever position desired and they lock by friction. Placed at an angle they deflect the wind. When the shield is not in use it folds against the back of the front seat, taking about the same amount of room as would a robe. The makers claim it will not rattle or break.

**Manufactured by the "J. H." Tonneau Shield Co., New York City, N. Y. Write for prices.**

### CROW MECHANICAL FAN BELT.

A new device for Fords is the Crow Mechanical Fan Belt, which consists of a steel chain to which blocks of the best oak tanned leather are embedded. There are three parts to each link and by sliding out any leather section the chain opens and it closes as soon as the leather is replaced, this feature making it possible to remove any number of links desired. The ventilated tread insures a direct contact between belt and pulleys.

**Manufactured by the Mechanical Belt Co., St. Joseph, Mo. Write for prices.**



### KROM-NIK GEARS.

The law of physics will not allow the moving of a heavy load without the proper gear reduction. Yet a large number of Ford cars are today used for heavy hauling. The standard gears are not designed for heavy work. The Krom-Nik Anderson Special Gear offers the lowest possible ratio for hauling and hill climbing. It has a special type of tooth unlike any other and with an additional half pound in weight it gives remarkable strength and efficiency. The 4.2 to 1 ratio offers the lowest gear reduction possible in a Ford axle. The special racing 3 to 1 gears manufactured by this company are designed for owners who live in the country where they want extremely high speed for use in racing cars and are made of the same material.

**Manufactured by the Krom-Nik Gear Co., Chicago, Ill. Price, $12.**

### ADAMSON VULCANIZER.

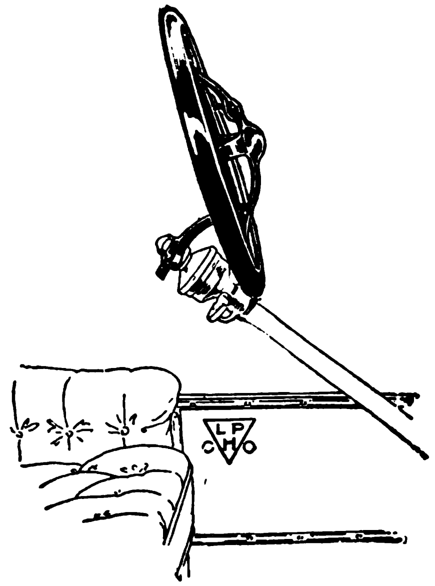
An entirely new and improved feature in portable vulcanizers is the use of the new dry fuel in the Adamson model "E" outfit for repairing tire punctures. It consists of a powdered dry fuel, which when poured from the measuring cup into the receptacle and ignited burns with a hot glow without flame, vulcanizing the patch permanently. The outfit includes vulcanizer, can of Adamson dry fuel, a box of 12 patches, measuring cup, sandpaper and directions.

While serving its purpose as well as any of the large outfits for vulcanizing, it is much handier and efficient, as it can be packed away in the car among the tools or in any small space and is ready for use at an instant's notice. With such a device in the tool kit the motorist can cease worrying about possible punctures.

**The Singleton-Hunting Co., Cleveland, O. Price, $1; extra box of patches, 25c; extra can of dry fuel, 50c.**

SIX CHARGES
ADAMSON
DRY FUEL
No flame It Glows
ADAMSON

Adamson Vulcanizer.



### TILTING STEERING WHEEL.

A Tilting Steering Wheel for Fords has recently been placed on the market by the L. P. Halladay Co. It may be mounted on the steering post, replacing the regular wheel, and requires no changes but the removal of a nut, and the substitution of a new spider. The device consists of a special spider having one arm hinged so as to allow uptilt of the wheel and an easy entrance to the driver's position. This wheel is made in 15 and 17-inch sizes, with a choice of plain or corrugated rims, whereas the replacement of the original rim may be made if desired. This comfort should readily be recognized by the Ford owner, as it requires no extra effort to handle it. Locks automatically and is finished in black Japan.

**Manufactured by the Halladay Co., Streator, Ill. Prices: 15-inch spider, $3; 15-inch spider with rim, $4; 17-inch spider with rim, $5; corrugated rim, either size, $1.**

### THE HUBBELL TOGGLE SWITCH.

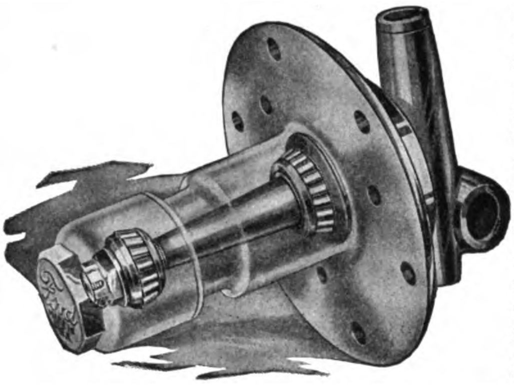
This newly devised switch mechanism is quick to work and slow to wear. It drops instantly into place and will quickly break the connection with a flip of the lever. It is easily installed upon the dash and requires no complicated movement of the fingers to send it into action. With the handle up the current is on and with the handle down the current is off. It also comes with a key that is easily detached, making the switch fool proof. All types are made, meeting the regular standard and special switch requirements.

**Manufactured by the Harvey Hubbell Co., Inc., Bridgeport, Conn. . Write for prices.**

### WRIGHT ROLLER BEARING.

A roller bearing for the front wheel spindles of the Ford chassis, identical in design with bearings now used for many trucks and passenger cars, is now being marketed by the National Bearings Service Co., Philadelphia, Pa. This bearing is manufactured by the Wright Roller Bearing Co., and is unique in that there is no cage or retaining mechanism to hold the rolls in the raceways, so that more rolls are used than in any other type of roller bearings. The makers claim that the gain in number of rolls is approximately 50 per cent., as compared with average types, and that the load carrying capacity of the bearing is above other makes of the same size. The bearing has been produced for the National Bearings Service Co. to meet a demand believed to exist among Ford owners for equipment more enduring than ball bearings of the cup and cone type, which will increase the endurance and efficiency of Ford machines. The bearing will fit the wheel spindles without mechanical changes and can be installed as easily as the bearing now used for Ford chassis.

**Marketed by the National Bearing Service Co., Philadelphia, Pa. Write for prices and literature.**

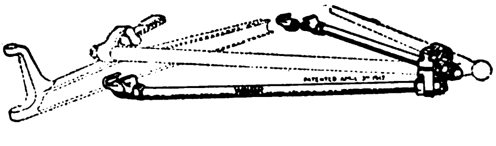


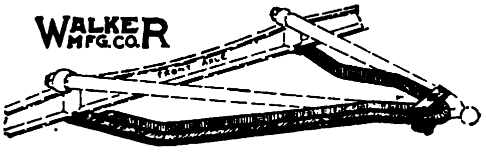
Wright Roller Bearing Designed for the Ford Car.

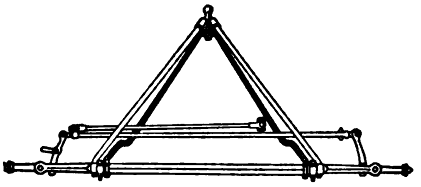
### FORD AUXILIARY RADIUS RODS.

Designed for strength and for reinforcing the regular Ford radius rods they assist and brace the front axle, keeping it straight, thus bracing and preventing the breakage of the regular rods. They are attached without drilling, for they simply clamp onto the rear of the regular rod and are fastened to the axle by using the regular Ford perch bolt. Made of solid three-quarter-inch steel rods, with malleable clamp, the outfit weighs 12 pounds. There is another type made of 1x1 inch angle iron, weighing eight pounds, and a still lighter type of angle iron stock weighing five pounds and a tubular type of the same weight.

**Manufactured by the Walker Manufacturing Co., Racine, Wis. Prices from $2 to $4.**







Ford Auxiliary Radius Rods for Use When Chassis Is Converted.

### DISTEEL WHEELS.

Steel wheels for automobiles mark a great improvement in wheel construction. The Disteel Wheel, a product of the Detroit Pressed Steel Co., was exhibited at the New York Show for the first time and is already standard equipment for some of the more costly cars. The steel wheel has gained great popularity, especially on the larger and heavier cars. In the Disteel Wheel, a concave steel disc that is mounted with the concave side outward takes the place of spokes. The disc proper is thickest where it is attached to the hub, tapering slightly towards the rim. By reason of this construction road shocks and strains are widely distributed. The weight of the wheel is largely at the hub, so that the flywheel action of wood wheels caused by the heavy weight at the rims is almost entirely eliminated. The integral rim has been approved by the Tire and Rim Association. To remove the outer rim it is necessary only to take off 11 nuts with a socket wrench on a 34-inch wheel. The pressure in the tire, combined with the force brought to bear by the rim nuts serve to clamp the two sections of the rim firmly to the disc, which makes possible the use of a much thinner disc than would be safe with any other fastening. It requires little time to clean a disc wheel and they serve in a large measure to screen the springs, axles, rods and other parts.

**Manufactured by the Detroit Pressed Steel Co., Detroit, Mich. Write for prices.**

### "RIMCO" PLIERS.

Heretofore the average insulated plier offered to the accessory trade has been of hard rubber stock, which is not practical for rough usage. The "Rimco" Plier stands the hard practical service required for all types of high-tension work and the insulating compound is of such material that it is semi-soft instead of hard, therefore, it will not crack or break when dropped upon a hard surface. These pliers are indispensible to the man who considers "safety first" in making repairs and are handy in the equipment of automobiles and trucks.

**Manufactured by the Rubber Insulated Metals Corp., Plainfield, N. J.**

# Good Demand for Used Cars At Chicago

## Second Annual Show of Exchanged Automobiles Revealed Lively Buying Spirit and Upward Tendency in Prices—Efficient Method of Handling Cars

THE second annual show of exchanged cars held in the Coliseum at Chicago under the auspices of the Chicago Automobile Trade Association, proved even more successful than the initial exhibition staged by the organization last year, and demonstrated that the sales and inspection methods employed in distributing used car meets with public approval.

There were 104 exhibits in the show, including 38 passenger car displays, 16 exhibits of trucks and about 50 accessory booths. The prices of the used cars displayed, the majority of which appeared almost as new, ranged from $150 to $4000.

An admission fee of 25 cents was charged, although approximately 10,000,000 free tickets were distributed for the show. Over 800 cars were examined by the technical committee, of which number 725 were appraised as being in the proper mechanical condition to warrant their exhibition. Less than half of this number, of course, could be exhibited at the same time, so a rule was made permitting the exhibitors to remove cars that had been sold from their exhibits twice daily and replace them with others.

The total number of cars sold this year at the show was about the same as last year, actual deliveries of about 220 machines being made, but the valuation of the gross sales was approximately $200,000, as compared with about $175,000 in 1917.

Practically all the prices established by actual sales indicated the upward trend in the used car market and had the weather been more seasonable or the show held later in the season an even stronger advancing tendency of prices would have been manifested according to the consensus of opinion among the dealers.

The prices as shown in the accompanying table, taken as a whole, are a good criterion of the market value of the cars quoted, although they represent a different market than the open market, as in every case the car sold was practically rebuilt and in A-1 condition, while the majority of cars advertised for sale through the newspapers are offered "as is," which means that the seller makes no particular guarantee as to their condition, but will state all the known facts about the car.

When the initial show plans were made a year ago the greatest step forward which any body of dealers has made toward correcting an erroneous opinion of exchanged cars in the public mind was taken. This was the plan of inspecting and appraising every car allowed to enter the show and affixing a tag showing that the Chicago Automobile Trade Association guaranteed each car to be as represented. This plan gained the confidence of those who came to the show last year and was largely responsible for the success of the first efforts Chicago dealers made to bring exchanged cars together to compete for public favor.

In the process of this inspection and up to the time the car, if it passes inspection, is sold, three different tags are affixed to it. The first one, a white tag, is filled in by the dealer and attached to the car before it leaves his place of business. This tag shows the make, style, model, motor number, number of cylinders, horsepower, color of body, color of wheels, the original list price and the lowest cash price for which it will be sold. In addition it shows the condition of all of the mechanical units, the lighting system, the tires, upholstery, paint, curtains and top. All of this information must be given, together with the name of the dealer offering it. When the car comes to the inspection field with this information attached, each item is checked over carefully and if the findings of the mechanical inspection and appraisal committee are the same as those shown on the card for each particular part covered, three members of committee affix their signatures to the tag. If any part does not, in the mind of the committee, come up to the dealer's statement, notation is made and the car sent back for further overhauling. Only two opportunities, however, are given for a car to come within the official O. K. of the inspection committee. If the lowest cash price which the dealer has placed

### *Prices Established on Actual Sales at Chicago*

| | |
|---|---|
| Ford 1916 roadster | $275 |
| Overland roadster 83 | 400 |
| Maxwell roadster 1916 | 425 |
| King touring | 425 |
| Overland touring 83 | 425 |
| Overland touring | 450 |
| Chevrolet touring 1917 | 450 |
| Empire touring 1916 | 450 |
| Overland touring 1916 | 475 |
| Grant roadster 1916 | 475 |
| Maxwell roadster 1916 | 475 |
| Case 5-passenger 1915 | 500 |
| Dodge touring 1915 | 500 |
| Paige touring 1915 | 500 |
| Overland touring 4-83 | 500 |
| Locomobile touring 1912 | 500 |
| Briscoe touring | 525 |
| Briscoe touring 1917 | 550 |
| Saxon touring 1916 | 550 |
| Scripps-Booth roadster | 550 |
| Cole touring 4-40 | 550 |
| Overland touring 82 | 550 |
| Briscoe touring 1917 | 575 |
| Studebaker touring 1915 | 575 |
| Saxon touring 1916 | 575 |
| Studebaker touring 1917 | 595 |
| Studebaker E D touring | 600 |
| Chalmers touring 1917 | 600 |
| Briscoe touring 1917 | 600 |
| Chalmers 1916 touring | 600 |
| Dodge touring 1916 | 600 |
| Overland touring 85-4 | 600 |
| Studebaker 7-passenger | 600 |
| Oakland touring 32-B | 625 |
| Dodge touring 1916 | 645 |
| Elgin roadster 6-16 | 650 |
| Saxon roadster | 650 |
| Overland touring 86 | 650 |
| Dodge touring 1916 | 650 |
| Chevrolet touring 1917 | 650 |
| Dodge touring 1916 | 665 |
| Overland club roadster 1917 | 675 |
| Oldsmobile touring 1916 | 675 |
| Hubmobile roadster N 16 | 700 |
| Davis roadster F | 700 |
| Hupmobile touring K | 700 |
| Chalmers touring 32-B | 725 |
| Studebaker touring 1917 | 750 |
| Maxwell sedan 1917 | 750 |
| Cadillac coupe | 750 |
| Patterson touring 1917 | 750 |
| Reo touring R | 750 |
| Hudson phaeton 1914 | 750 |
| Patterson touring 1916 | 750 |
| Mitchell touring 1916 | 750 |
| Cole 2-passenger 1916 | 750 |
| Dodge touring | 750 |
| Winton touring 1914 | 750 |
| Dodge touring 1917 | 760 |
| Reo touring 1916 | 775 |
| Paige touring | 775 |
| Paige Fairfield touring | 775 |
| Dort sedanette 1917 | 800 |
| Haynes touring 35-T | 800 |
| Grant touring | 800 |
| Oakland 34 touring | 800 |
| Reo touring 1917 | 800 |
| Chandler touring 1917 | 800 |
| Buick touring 1916 | 800 |
| Jeffery roadster 1917 | 800 |
| Studebaker touring 18-6-E | 800 |
| Pathfinder touring 7-B | 800 |
| Grant touring K | 825 |
| Buick touring 1917 | 825 |
| Oakland touring 1917 | 850 |
| Oldsmobile touring 1916 | 850 |
| Mitchell touring 1916 | 850 |
| Paige Fairfield touring | 875 |
| Oakland sedan 1917 | 875 |
| Hudson phaeton 1915 | 875 |
| Overland coupe 85-4 | 875 |
| Chalmers touring 6-30 | 900 |
| Hudson cabriolet 6-40 | 900 |
| Elgin touring 1917 | 900 |
| Buick touring 1917 | 900 |
| Paige Fairfield touring | 1000 |
| Oakland 7-passenger 50 | 1000 |
| Mitchell touring C-7-42 | 1000 |
| Hupmobile touring N | 1000 |
| Willys-Knight coupe 84 | 1050 |
| Hudson touring 1917 | 1100 |
| Chandler touring 1917 | 1100 |
| Dodge sedan 1917 | 1190 |
| Dodge coupe 1917 | 1190 |
| Elgin sedan 6-8-17 | 1250 |
| Haynes touring 37 | 1300 |
| Kissel sedan 1917 | 1300 |
| Hudson sedan 1916 | 1350 |
| Hudson phaeton super six | 1350 |
| Cole touring 8-60 | 1350 |
| Franklin touring B | 1450 |
| Winton touring 21 | 1450 |
| Jordan touring 1917 | 1500 |
| Cole 7-passenger 8-62 | 1500 |
| Packard limousine 1914 | 1500 |
| Detroit electric brougham | 1550 |
| Ohio electric 1917 | 1750 |
| Hudson super six sedan | 1800 |
| Hudson super six limousine | 1900 |
| Paige Fairfield | 1900 |
| Hudson phaeton 1915 | 1950 |
| Winton touring 22-A | 2250 |
| Marmon speedster 1915 | 2300 |

**Mechanical Inspection and Appraisal Committee**

**A. D. MORTIMER, Chairman**

---

**Please Inspect the Following Car:**

**(Dealer fill out the following)**

| | |
|---|---|
| **Make**—————— | **Horse Power**—————— |
| **Style**—————— | **Color of Body**—————— |
| **Model**—————— | **Color of Wheels**—————— |
| **Motor No.**—————— | **Orig. List Price**—————— |
| **No. of Cyl**—————— | **Low. Cash Price**—————— |

**CONDITION OF**

| | |
|---|---|
| **Upholstery**—————— | **Springs**—————— |
| **Paint on Body**—————— | **Brakes**—————— |
| **Paint on Wheels**—————— | **Radiator**—————— |
| **Top**—————— | **Magneto**—————— |
| **Side Curtains**—————— | **Starter**—————— |
| **Motor**—————— | **Battery**—————— |
| **Transmission**—————— | **Wiring**—————— |
| **Steering Gear**—————— | **R. F. Tire**—————— |
| **Windshield**—————— | **R. R. Tire**—————— |
| **Uni. Joint**—————— | **L. F. Tire**—————— |
| **Front Axle**—————— | **L. R. Tire**—————— |
| **Rear Axle**—————— | |

---

**DEALER'S NAME**——————————

**Address** —————— ——————

**Phone** ——————————

**By** ——————————

---

**MECHANICAL INSPECTION AND APPRAISAL COMMITTEE**

**Approved** ——————————

**Approved** ——————————

**Approved** ——————————

**Form 7** **Chairman**

Facsimile of White Card Which Is Attached to Car by Dealer.

on the car is not within reason the committee refuses to allow it to enter the show at that price and appraises the car itself, offering the dealer the privilege of showing it at that price or having the car ruled out of the show.

When the officially O. K.'d cars come to the show the white tag is removed and the green tag showing the price of the car, the makes, style, number of cylinders, motor number, owner's name, condition shown by road test, and also the mechanical condition, is sealed to the car in the same way that the doors of freight cars are sealed. A complete record is kept of the serial numbers of these green cards so that there is no chance for substitution and when a car is sold a sales ticket or a contract with a reasonable deposit must be shown which corresponds with the price listed on the green tag.

As soon as the car is sold a red tag is attached, giving the green tag number and the name of the car, together with a request to the show manager that the car be placed outside the Coliseum, where the exhibitor's driver or the owner will take it away. The lower part of this tag is perforated and forms a call check, which is given to the purchaser. Cars can be moved out and in twice daily—before the show opens in the morning and during the dinner hour in the evening.

There are perhaps many places in Chicago and elsewhere where the price of an exchanged automobile or truck can be juggled to influence buying, but the Coliseum and the Coliseum Annex are not numbered among them. A man might as well attempt to go into a State street department store and buy a suit of clothes at a price lower than that at which it was marked as attempt to get an exchanged automobile or truck at the Coliseum or Coliseum Annex during the show at a price lower than that which is marked on the green tag.

Dealers think so well of this plan of inspection and appraisal that it is possible a permanent committee may be appointed by the Chicago Automobile Trade Association whose duty it will be to make inspections and appraisals throughout the year with the thought of elevating the exchanged automobile and truck business to the plane where it rightfully belongs.

**Auspices**

**Chicago Automobile Trade Association**

**Inspection No.**————

**Price $**————

**Make**———— **Style**————

**No. of Cylinders**————

**Motor No.**————

**Owner's Name**————————

**Inspected March**————**1918**

**We, the undersigned, certify that we have examined the above car as to the following:**

**Road Test**————————

**Mechanical Condition**————————

**Price $**————————

**The Mechanical Inspection and Appraisal Committee**

————————

————————

————————

**Chairman.**

**Form 8**

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Facsimile of Green Card Placed on Car When It Is Exhibited.

## SPECIAL POSTAL EXPORT LICENSE FOR REPAIR PARTS.

The War Trade Board announces that there has today been issued, through the postal service, a special export license, No. R. A. C.—50, authorizing until April 15, 1918, the exportation through the mails of repair parts for agricultural implements to Great Britain, France, Italy or Japan, or their colonies, possessions or protectorates. This will permit shippers to send to the countries indicated until April 15, 1918, through the mails, such repair parts to agricultural implements without securing individual licenses for the same, as has heretofore been necessary.

# *New York Will Have Over 500,000 Cars*

### If Present Rate of Registration Is Maintained in That State Half Million Mark Will Be Reached.

New York state will have a half million motor vehicles by the end of this year if the present rate of increase in registrations is maintained for the next few months. Not only have all the figures been smashed in the automobile bureau, but requests for original registration blanks indicate a heavy buying of new cars totaling several hundred daily.

February, 1917, was the biggest month in receipts in the history of the state's motor vehicle bureau. $945,000 having been collected from the registration of cars and the licensing of chauffeurs.

The New York City bureau has already taken in $1,600,000, or within $500,000 of the entire amount collected during all of last year. Records of the Albany bureau clearly demonstrate the increased registration along all lines. Comparative figures show that 59,379 cars were registered in that zone of 30 counties up to March 30, an increase of 17,111 over a like period last year, while the increase in revenue this year amounts to $145,222.

An average daily increase over last year of 336 cars have been shown in the face of weather conditions that until recently have been of unusual severity.

Comparative figures covering the registration and receipts of the entire state show a gain of 19,293 cars over a year ago and with increased receipts of $191,-352. All told 225,685 cars have been registered this year, with total receipts of $2,384,877.

---

**Green Tag No.**————

**Name of Car**————————

**SOLD**

**Thos. P. Convey, Show Manager:**

**Please have this car placed on Wabash Avenue, opposite Coliseum Annex.**

**Date**————————

**We agree to have OUR driver there to take the car away.**

**Name of Firm**————————

**By**————————

**O. K.**————————

**Will call check**

**Green Tag No.**————

**Make of Car**————————

Facsimile of Red Card Which Is Attached to Car After Sale and Carries Orders.

PRACTICAL SUGGESTIONS

### AUXILIARY AIR INTAKE.

(Figure 54.)

In a great many cases much fuel may be saved if an extra air supply is provided for the engine when running on the higher speeds. You can make from a grease cup, a piece of sheet brass and a length of heavy wire an auxiliary air intake that will prove as efficient as many on the market. The cap of the grease cup should be perforated to make a number of holes in a triangular pattern, the piece of brass cut into shape and riveted to the centre of the cap and left free to swing on its centre so that by its movement the holes may be covered or uncovered. (See A.) The assembly is then screwed into the intake manifold, as shown at B, and a wire run from the piece of sheet metal to the throttle wire. As the throttle is opened and the engine speeded up the holes in the cup are opened by the throttle action and more air is admitted. When the throttle is closed, or nearly so, the air is prevented from entering. The correct setting and length of the wire, X, can be determined by experiment.

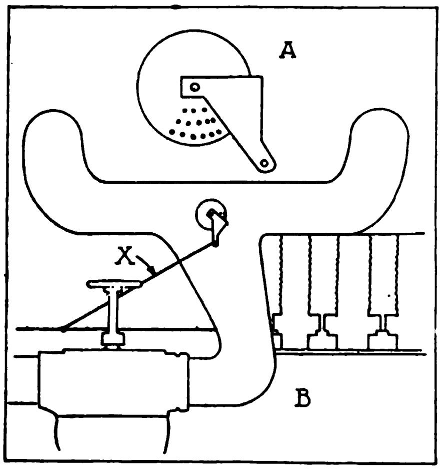


Figure 54.

### FORD STEERING COLUMN BRACE.

(Figure 55.)

In getting into the driver's seat in a Ford car, the driver, following the line of least resistance, invariably uses the steering wheel to swing himself into position for driving. Continual use of this method makes the steering column wabbly, thus weakening it. To overcome this condition a suggestion is hereby given, together with a sketch showing the construction of a brace that will restore its rigidity.

Two short lengths of steel or iron bar are drilled and bent to the position illustrated and attached to the steering column and to the dash. When tightened this brace will support the steering column and do away with all play and rattles.

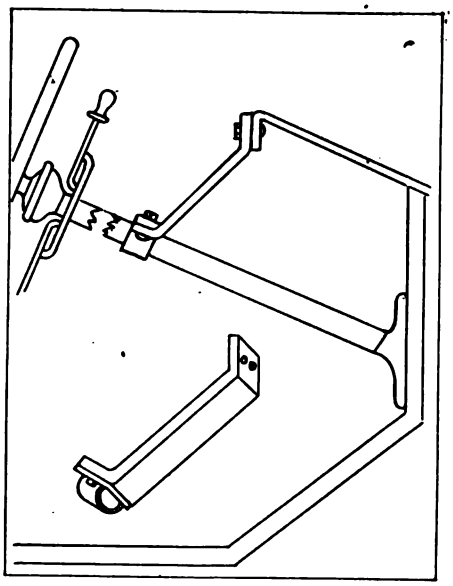


Figure 55.

It is often desirable to use paraffin on the automobile in various places, such as the terminals of the storage battery. The most convenient way to use it is in its liquid state, but to liquify it the paraffin must be heated, and it cools rapidly.

### EXTRA HAND FOR TIRE CHANGES.

(Figure 56.)

In changing the Ford tire, when alone, there is often the need of an extra hand to hold a tire tool in place while manipulating the other tool and screw driver to wedge the tire off the rim. A good substitute for this extra hand in this work can be made by making a link of steel or iron wire about one-quarter inch in diameter and about four inches long from end to end and about two inches wide at the end which goes about the spoke and an inch wide at the other end which holds the tool. The accompanying sketch shows how this link can be used to advantage in the removal of a tire.

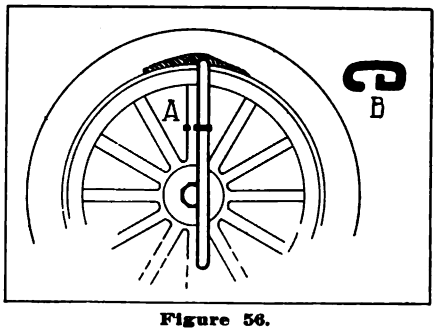


Figure 56.

### CUTTING A KEYWAY.

The amateur mechanic is often puzzled to know just how to proceed to cut a keyway in a shaft; the cold chisel method requires considerable skill, and very few amateurs are successful in its application. The following suggestion may prove helpful. In a block of hard wood about four or five inches long and about four inches square on the ends, bore a hole lengthwise, slightly larger in diameter than the shaft which is to be splined. Cut a strip from this block so that when it is removed the slot thus formed will extend from the surface to the hole in the centre and is the width required for the keyway. Two pieces of hack saw blades are placed in this slot, one on each side, and the strip is forced back again. The blades will extend into the hole and bear against the shaft. By moving the block back and forth on the shaft the sides of the keyway will be formed. It will then be an easy matter to remove the surplus stock with a cold chisel.

### GASOLINE GAGE.

How often, when you desire to find the depth of the gasoline in the tank and try to measure it with a rule, do you find that by the time the rule is removed the gasoline on it has evaporated and you canot tell just what the correct level is? Bend a wire as shown in our cut and slip it through a cork. Put the apparatus in the tank, squeeze the free ends to allow the cork to float to the top of the gasoline. The spring of the wire will hold the cork in position. It is an easy matter to determine the amount of gasoline in the tank, by removing the device and noting the distance the cork is from the bottom of the wire.

## SILENCING NOISY BRAKE RODS.

(Figure 57.)

This suggestion is practical in almost every instant for small cars where rattling brake rods are a source of constant irritation to those riding in the car. By a simple means of attaching steel springs, as shown in the illustraton, this trouble can be easily overcome, thus helping to make the ride a pleasure by getting rid of this annoyance.

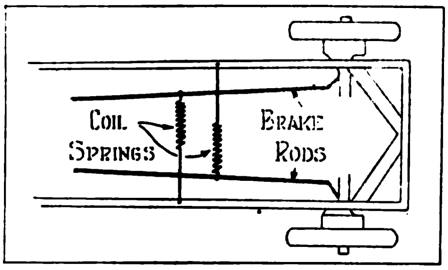


Figure 57.

## TOOL TO HOLD PISTON RINGS.

(Figure 58.)

Much trouble is encountered in replacing pistons into the cylinders on account of the inability to clamp the rings properly and many suggestions of practical value have been offered by our readers. For practical results the following suggestion and sketches are herewith described and illustrated.

This tool is made with a short length of steel or iron bar in which a hole is drilled. A strip of steel tape or iron ribbon is attached to one end of this bar by punching a hole in the tape and driving a stud through the tape and hole turning one end of the stud into a hook. The other end of the tape is punched at regular intervals with holes, whereupon the tape can be pulled around the piston ring and clamped to the stud. This device will allow the ring to slip by the tape upon entering the cylinder.

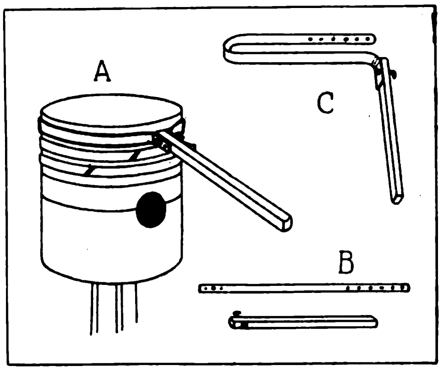


Figure 58.

## COMPRESSING SPRINGS.

(Figure 60.)

One of the most exasperating things that the amateur automobile repairer has to deal with is the matter of compressing springs. For instance, the valve springs in an ordinary L head motor are usually hard to get at and require compressing before the valve pin can be put into place.

The following method will be found very practical for attaching wires to keep the spring compressed: Select two iron washers large enough to equal the outside diameter of the spring to be compressed and cut slots about ¼ inch wide, as shown at B. Place these washers on each end of the spring, having the slots pointing upward, and then place in a vise and screw up until the spring is fully compressed.

Now bend two wires in the form shown at A. These should be heavy enough to hold the spring tightly, and the bent over ends should be just long enough to hook over the coil of the spring. The ends of the wires should be bent toward each other so that the tension of the spring does not slip them off. The sketch shows about the proper proportions and angles.

One of these hooks may now be inserted over the compressed spring through the washers. Turn the spring around, screw up on the vise and hook on the other wire. The spring will be held fully compressed by the two wires, as shown at D, which may be easily slipped off when the spring is in place, if the hooks have been properly bent.

Save the washers and hooks for the next time.

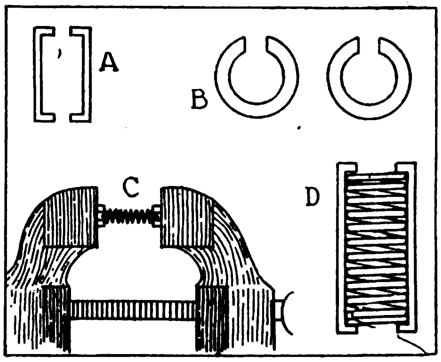


Figure 60.

## OIL STRAINER.

(Figure 59.)

From the constant removal of oil from automobile engines being repaired in a garage comes the need of an oil strainer, as much valuable lubricant can be reclaimed in this way that otherwise would be wasted. The accompanying sketch shows such an oil strainer that will filter the dirt and foreign matter from oil and make it useable again for most any purpose.

The oil to be reclaimed is put into the tank at the left, from which it flows down through the outlet pipe and forces its way up through the fine wire mesh screen shown on the filter tank at the right. This screen is set in a hoop, which is removable for cleaning, and the cloth screen above is also set over a hoop so that it can be changed when clogged up. A receptacle can be placed under the outlet of the second tank to receive the purified oil, which rises to the top.

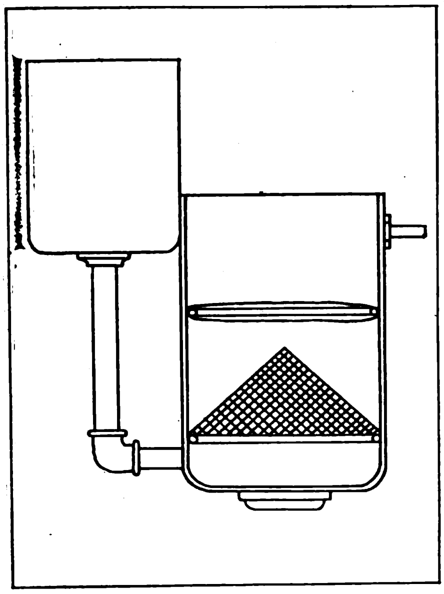


Figure 59.

## TOOL BOX AND FOOT REST.

(Figure 61.)

In many instances the owner of an automobile finds that there is not sufficient room in his car for the necessary tools, tubes and other equipment required in case of road repairs. We illustrate herewith a unique, practical and easily constructed box, which can be made to fit flush to the back of the front seat in the tonneau with a sloping surface, upon which can be tacked linoleum or rubber stair tread. The length of the box is, of course, determined by the size of the car and the only fittings required are two flat hinges and two small brass hooks to secure the cover. The lock is a matter of preference. The box can be covered with imitation leather or painted to conform with the cover scheme of the car. This will hold pump, tire irons, jack, tubes, tools and various other devices necessary.

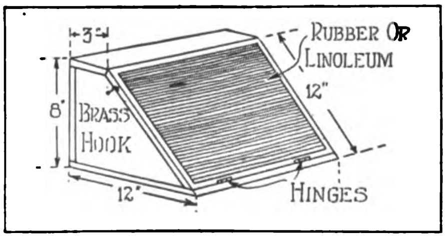


Figure 61.

## RAIN PROOFING WINDSHIELD.

To avoid the necessity of lowering the windshield in rain storms, owing to the collection of water on the front of the glass, which obscures the vision, a solution of soap may be applied which will keep the glass transparent. A small quantity of semi-liquid or soft soap should be made into a thin paste with water and applied evenly over the inside and outside of the glass, leaving a thin film. While this is hardly noticeable to the eye, when the rain or moisture strikes the surface it will run off, leaving a clear vision.

## CARBURETOR TROUBLES.

If you are troubled by backfiring through the carburetor, which may be due to late ignition of a weak mixture, try the following suggestion: Place a flared cone of very fine wire gauze of 50 or 60 mesh in the suction pipe between the ends of the pipe and carburetor with a soft gasket to prevent any leakage.

# *War Thins Out the Repairmen in Ohio*

### Over One-Third of Mechanics, Machinists, Repairmen and Chauffeurs Have Gone Into Service.

The motorists of Ohio are going to have to do a large part of their own repair work during the summer touring season, according to announcement just made by the War Service Committee of the Ohio Automobile Trade Association, whose headquarters are located at Columbus.

Over one-third of the mechanics, machinists, repair men, tire men and chauffeurs of Ohio have already gone into the army, or will be taken in during the next 30 days.

It is going to be a mighty urgent need that will allow a motorist to telephone to a service station for service from now on, according to the War Service Committee. Just why this is so is brought out by a questionnaire which was sent out by the War Service Committee of the Ohio Automobile Trade Association to the 4500 automobile tradesmen in Ohio last month. Because this is the beginning of the busy season in the trade, only 560 returned the questionnaire filled out, but it is significant that those who sent in their answers are representative of the entire trade, and are located in all sections of Ohio, so a fairly accurate census of the mechanics was secured.

These establishments range in size from the one-man shop to the large service stations in the major cities, employing 25 to 50 men each.

According to the census, these 560 places of business employed 4915 men on April 1, 1917. This is an average of eight men per shop. Taking this as indicative of the entire retail automobile business in Ohio, there were approximately 40,000 men employed in the various branches a year ago in Ohio.

Of these, it is estimated that 21 per cent., or over 8400 men, have already entered Uncle Sam's service in some capacity or another. Not only is this the case, but the proprietors of the various service stations, garages, repair shops, etc., all over Ohio report that 7200 more will be in the service before June 1st of this year. This means that over 15,000 men will be in the service by June 1st.

Of course the taking away of so large a proportion of skilled laborers from an industry so complex as the automobile business has created a number of new and perplexing problems for the proprietors of the various establishments. One of the questions asked upon the questionnaire was, "How do you plan to meet the shortage of men in your place of business?"

Many methods were suggested in answer to this question, one of the most popular being the intention of training younger men to take the places of those who are of military age. Such a course will be an eventual benefit to the industry, as there will be a larger supply of trained men to rely upon than ever before.

Another suggestion made by many of the larger establishments was the employment of women to take the places of the men who have been called away. Several of them have already been experimenting with women and report that they are rendering most satisfactory service.

Still another method, in line with the suggestion of the government for the working out of more economical methods of doing business in all lines, is the use of a greater amount of labor saving machinery, thus releasing the men for service without disarranging the routine of the shop.

One man frankly stated, in answer to this question, that he intended to work a little harder himself, while still another even more frank, laconically answered "work nights!"

The Ohio Automobile Trade Association is now engaged in classifying the reports and picking out the best suggestions offered. These will be incorporated in the next bulletin of the association, which goes to all tradesmen throughout Ohio monthly.

"In this way we hope to be able to render practically 100 per cent. efficient service this summer," said A. E. Mitzel, Canton, president of the association. "Of course, the loss of over one-third of our mechanics makes this difficult, but the government can have another third of them whenever they need them."

# *Paige Co. Erects 3 New Buildings*

### Main Plant Will Be Enlarged With Addition Providing 66,000 Square Feet of Floor Space.

The steady growth of the Paige-Detroit Motor Car Co., together with the extra demands made by the war and the addition of a new Paige truck department, has necessitated greater facilities, both in the manufacturing and the executive end of the business. As a consequence there are now under way three new buildings that will add 66,000 square feet of floor space for general manufacturing and production purposes.

These three buildings are being constructed on the extensive vacant property directly across the street from the main plant of the Paige company and will comprise units of the central groups. There are several other units in another part of the city. Two of the new buildings will be used for temporary storage purposes for Paige products in transit from finishing rooms to transportation platform. The third new building will be entirely a construction plant. The new structures will be built of brick, steel and steel sash, providing abundance of light.

In addition to these new buildings the Paige is preparing to add two units to its executive building, which will increase the space by 50 per cent. and which will provide for the requirements of the new Paige truck department officials, as well as for other purposes caused by increased business.

### S. W. WYMAN DISTRICT MANAGER FOR I. H. C. MOTOR TRUCKS.

In 1916 the International Harvester Co. doubled its motor truck sales. Last year it enlarged the factory and doubled this business again.

On March 16, 1918, sales of International motor trucks had already passed the total 1917 dollar and cents mark and left it far behind.

It is in line with this active development of sales policy that the company has recently created another district managership and selected for the position S. W. Wyman. Mr. Wyman has been appointed International motor truck district manager of sales, with supervision over the whole territory of the United States west of the Mississippi.

Wyman is an I. H. C. man with a long record and at the same time he is a direct product of the present International motor truck and its immediate and remote ancestors. Mr. Wyman has been with the Harvester company 10 years and the first thing that he ever sold for the company was a motor truck.

Wyman was living in Auburn, N. Y., 10 years ago when he first saw a picture of the International motor truck of the year 1907. It was this picture which decided Wyman that he wanted to work for the Harvester company. He got the job and started out selling the trucks with nothing but pictures and specifications to sell from. He sold to men most of whom had not only not seen the Harvester company's truck, but who had not even seen a motor truck of any kind. Wyman bears the unique distinction of having sold 15 of the 13 trucks sold in Auburn during the first year of his connection with the company. That is, he sold 15 on his territory, but even in that early day motor truck companies were worried by deliveries and the company found it impossible to send more than 13 trucks to Auburn. Wyman said it hurt him all the way through to give those two men back their money. Five years later (five years ago!) Wyman sold 101 motor trucks in one year.

His boss, O. H. Browning, says there is only one way to explain Wyman's success, and that is that he has always hit the work trail and hit it hard. He has used his head to the limit and worked to beat the band. That's why the Harvester company felt justified in slicing off more than half of the United States and handing it over to him. S. W. Wyman has a most delightful and enjoyable personality.

### NEW KISSEL DISTRIBUTOR FOR NEW ENGLAND.

William F. Aldrich, formerly of Providence, has bought out the entire Kissel interests in New England, taking over the agency for both passenger cars and trucks and also their building at 940 Commonwealth avenue, Boston. This building is directly opposite the new armory. The main entrance to the sales room is on Commonwealth avenue, and the entrance to the service station is on Pleasant street.

Many changes will be made in the building and a new sales organization will be put on immediately.

Mr. Aldrich has been closely connected with the interests of the New England Velie Co. for the past two years. The new company will go under the name of the New England Kissel Co. and will show all of the "One Hundred Point" Six models. Service will be inaugurated at once and Mr. Aldrich proposes to keep the service station open both day and night including holidays, so that all Kissel users can have immediate attention.

Special equipment and complete stock of parts will be carried to take care of these several lines of automobiles. By handling these in conjunction and by using one complete floor of this building for service—and service only—will assure all customers of the promptest attention and the highest grade mechanical work.

William H. Taylor, who was formerly connected with the Kissel interests, will be on the floor to meet his old friends. Mr. Taylor needs no introduction to the Boston automobile public, as he has been associated with some of the larger companies there for many years.

### EMILE-JELLINEK-MERCEDES DIES IN SWITZERLAND.

A few days ago the newspapers carried a short news dispatch from Geneva, Switzerland, announcing the death of Emile-Jellinek-Mercedes, a wealthy automobile manufacturer. Few persons, however, recognized in this name the man who developed the Mercedes car and made the name synonymous with speed and endurance on the race tracks of many countries. Jellinek perfected this car while in control of the Daimler Motor Co., and named it the Mercedes in honor of his daughter.

### EXTENSIVE ROAD BUILDING PROGRAM ON IN ILLINOIS.

A more extensive road building program is in view in Illinois than has ever before been considered. Illinois is making a determined effort to "pull out of the mud" this year. The cost of building the new roads contemplated in the state reaches $3,000,000.

The most important improvement will be made upon the Lincoln Highway from Geneva to Fulton on the Mississippi river and on the Lincoln Highway feeder from Geneva to the City of Chicago. In furtherance of its purpose to establish at least one military road from coast to coast the Federal government has indicated the Lincoln Highway through Illinois. With the completion of several miles of concrete surfacing on the Lincoln Highway in Cook county the route across the state will be practically completed by the end of the year.

### BIG DRIVE-AWAYS FROM THE PACKARD FACTORY.

More than 12 per cent. of its cars and 21 per cent. of its truck deliveries since Dec. 1 have been made by the Packard Motor Car Co. to its branches and dealers via the drive-away method. These percentages represent either so much relief to the railroads during this period or just so much more business which could not have been done if the drive-away had not been adopted. These figures take no account of the hundreds of United States Army trucks which travel to the seaboard under their own power.

"When it is recalled that this achievement was made in the depth of a very severe winter, with the roads frequently choked by drifting snow, the feat reflects credit on the drivers, the dealers taking factory delivery and the vehicles that made the run," said George R. Bury, assistant general sales manager of the Packard. "In some instances trains of nine Twin Sixes and 30 trucks traveled 570 miles over wintry roads."

## *Women Conduct a Reo Drive-Away*

### A Squad of Khaki-Clad Drivers Pilot Cars From Lansing to Atlanta, Ga.

People along the Dixie Highway in the rural sections were almost lead to believe recently that the women had been called to the colors, as in this belief only could they account for the appearance of a fleet of Reo trucks passing along, nine of which were operated by women drivers clad in khaki. There were 10 of the Reo trucks in the fleet, which left Lansing, Mich., April 2, under the direction of K. T. McKinstry, sales manager of the Reo Atlanta Co., Atlanta, Ga., who drove the truck that led the way. The woman drivers, a squad of the Atlanta division of the National League for Women's Service, who are subject to call at any time for government service, were under orders from the Georgia state guard. Capt. Katherine Van Ecyk Harrington was in command, and with Lieut. Courtney Billups, a sergeant, and six privates, comprised the squad.

The itinerary of about 1025 miles between Lansing and Atlanta was covered in about seven days. When the trucks arrived at Jeffersonville, Ind., they were loaded with supplies for Camp Gordon and from that point on were accompanied by a guard.

## *The New Maryland Motor Car Laws*

### Jail Sentences Provided for on First Conviction in a Number of Instances.

New laws governing motorists in the State of Maryland are now in effect and jail sentences are provided for on first conviction in a number of instances. The maximum speed in the downtown districts is 15 miles an hour, 20 in outlying sections and 35 in open country, with violations of such as prima facie evidence of recklessness.

In the city of Baltimore beginning June 1, traffic cases will be tried in one court, which will be held at the central police station. Governor Harrington will appoint a justice to conduct the court. By centralizing these cases the several police courts throughout the city will be relieved of this work and the decisions will be given a uniformity which hitherto has been lacking.

Driving while under the influence of liquor, failing to stop and render assistance after an accident excessive speeding and using cars without proper authority are offenses for which upon conviction jail sentences of from 30 days to two years and a fine also can be imposed. Commissioner Baughman probably will institute a sight test in examinations for drivers' cards, which are made obligatory under the amended law.

Pneumatic tire machines will be charged for licenses at the rate of 60 cents a horsepower, and public cars not operating on schedule, at the rate of $1.20 each horsepower. Solid tire truck rates are $20 for one ton, $40 for two ton, $60 for three ton, $100 for four ton, $150 for five ton, $300 for six ton and $500 for seven-ton. Unless they have been licensed here previously, six and seven-ton truck licenses will not be granted. The charge for trailing cars will be at the rate of $10 for the first ton and $20 for each additional ton until the seven-ton limit is reached. Trailers with metal tired wheels will be charged at double rates.

Motorcycle licenses will be $5, with a tax of $3 for a side car. A special in-transit license for dealers bringing new cars into the state will cost $3.

### JERSEY CARS REGISTERED FOR USE BY THE RED CROSS.

The Hudson County New Jersey Automobile Club has voted to place the car of every member at the disposal of the Red Cross for the convenience of convalescent soldiers. A letter was received from the government suggesting that all cars be registered with the authorities for this purpose.

# *No Shortage of Petroleum*

## Mark L. Requa Oil Director Says There Is No Intention of Limiting Gasoline Supply for Motor Cars

There is no shortage of petroleum for our immediate needs, according to Mark L. Requa, director of the oil division of the U. S. Fuel Administration. The lack is one entirely of transportation. Gasoline must be produced as a by-product in the manufacture of fuel oil used in the navy, in merchant ships and in industrial plants, and the gasoline must be disposed of. Crude oil containing the lighter, volatile oils, such as gasoline, is dangerous for fuel purposes until the gasoline is removed.

Obviously, unless this gasoline is sold and consumed the cost of fuel oil will increase. There is, therefore, no intention on the part of the fuel administration to shut off or limit the supply of gasoline for use in motor vehicles.

"There has been considerable discussion as to cutting off the supply of gasoline to passenger vehicles, following the precedent set in England," said Mr. Requa, "but the conditions are entirely dissimilar for the reason that England produces no oil and has to rely entirely upon exports overseas. The United States, on the contrary, not only produces the oil for its own consumption, but large surplus quantities for export.

"It has been demonstrated recently that it is impossible to take oil for any specific purpose without exerting a detrimental influence on some other branch of the industry. The problem of what is least essential is an extremely difficult one to determine, and I am somewhat of the opinion that the non-essential industry does not exist.

"It is quite obvious that the oil facilities of the United States must be used in such a way as to produce the maximum benefit viewed from a national standpoint to meet the existing crisis.

"The priority list was established for the reason that it is impossible, because of transportation shortage, to supply all consumers. When the supply is sufficient the priority list automatically ceases to operate. When a shortage does exist class 12 receives no oil until all lower numbered classes are supplied.

"Total stocks in the United States approximate 160,000,000 barrels as of Jan. 1. Last year's production approximated 320,000,000, and there was a draft on stock of about 20,000,000. There is ample oil territory available in various parts of the United States. It is only a question of drilling to secure it."

Forty-one per cent. of all automobiles registered in Minnesota are owned in communities having a population of less than 1000, and less than 30 per cent. in cities of 10,000 or more population. More than half of the cars in the state are owned in villages or communities having 2000 or fewer residents.

Of the 39,086 cars sold in the state during 1917, farmers and residents of villages having no more than 2000 population bought 19,301, or very nearly one-half, while 14,940 were purchased in communities of fewer than 1000 persons.

An investigation of this subject made by the Standard Farm Paper Association, shows that in 11 towns in good farming and dairying territory, ranging from 5000 to 20,000 and having a combined population of 95,336, the number of motor cars owned on Nov. 1 last was 10,637, or one for every nine persons, while in eight towns of similar size located in mining and lumbering areas, with a combined population of 65,290, only 4036 cars were owned, or one for more than 16 persons.

This is concrete evidence that the farmer has a high appreciation of the utility of the motor car in his business. This is easily understood when it is remembered that the farmer is dependent entirely upon his own means of transportation, has long distances to go to market and his time is needed on the farm rather than on the road.

### "PROPER CARE OF YOUR CAR."

Quite in line with the nation's plan of conserving and preserving is the attractive 24-page booklet, "The Proper Care of Your Car," published by the Northwestern Chemical Co. of Marietta, O., manufacturers of the "Chemically Correct" line of Northwesco utilities.

This booklet is chuck full of practical hints for the motorist. It tells how to overcome and to correct some of the different ills a motor car is subject to. Unlike some booklets it gives more than one remedy for correcting the most common troubles. In fact, it tells just what its name implies, "The Proper Care of Your Car."

It is well illustrated and any motorist will find it serviceable and helpful. The readers of the Automobile Journal can secure a copy postpaid by writing the Northwestern Chemical Co. of Marietta, O.

### TEXAS CAR DEALERS HOLD ANNUAL ELECTION.

The second annual convention of the Texas Automobile Dealers' Association was recently held at San Antonio, Tex. Officers were elected as follows for the ensuing year: President, F. A. Weinrich, San Antonio; vice president, Roy Munger, Dallas; H. H. Bryant, San Antonio; George Conant, Houston; treasurer, W. F. Rose, Dallas; directors, W. G. Langley, Dallas; Hob Diggs, Fort Worth; H. L. Miller, San Antonio and P G. Stokes, Big Springs.

### HAYES WHEEL COMPANY MADE 3,913,297 WHEELS.

The Hayes Wheel Co., Jackson, Mich., manufactured 3,913,297 wheels during 1917, which is an increase of more than 1,000,000 wheels over the 1916 production of 2,732,264.

### SELDEN TRUCK SALES CO. INCREASE CAPITAL.

The Selden Truck Sales Co., which acts as distributor for Selden motor trucks, has increased its capital to $750,000 to finance the increased volume of its business. This action was taken at a meeting of the stockholders prior to the meeting of directors at which the following officers were elected: President, George C. Gordon; first vice president, William C. Barry; second vice president, Robert H. Salmons; secretary-treasurer, Hal T. Boulden, formerly sales director of the company, was elected vice president of the company in charge of sales and advertising.

Wilbur F. Reynolds, formerly export manager, was made third vice president in charge of foreign sales, and Charles E. Williams, a new man in the Selden organization, was named as assistant sales manager. C. H. Mason is now assistant sales manager and advertising director.

# *Light Exports of the Industry's Products*

### February Shipments of Cars, Trucks and Parts to Foreign Countries Lightest Since 1915.

The exports of automobiles, trucks and parts during February were valued at $6,958,808, or 41 per cent. less than the January exports and about 10 per cent. less than for the same month in 1917. The shipments were smaller in value than in any month since February, 1915.

Passenger car shipments were 674 less than the exports in January and the value decreased more than $700,000. Truck shipments decreased from 1156 in January to 765 in February, and the value decreased 45 per cent.

The fact that British South Africa, Australia and New Zealand bought but a small percentage of their usual purchases was largely responsible for the sharp decline in passenger car exports. In January the shipments of passenger cars to Australia totaled 931, as compared with 144 in February. New Zealand took 110 cars in February, as compared with 221 in January. British South Africa took 231 cars in January and 31 in February. Canada, however, took 919 cars in February, as compared with 692 in January.

The Allies took only a few trucks last month. France received 86 from this country, as compared with 662 the month before, while none were shipped to the United Kingdom.

## LUBRICATING CHARTS FOR POPULAR MAKES OF CARS.

Many car owners find it difficult to know just what lubricants to use in the various parts of their cars. They frequently use too heavy a lubricant in one part or too light in another part.

For the benefit of car owners the Joseph Dixon Crucible Co., Jersey City, N. J., have prepared a series of charts, containing instructions for lubricating several of the most popular cars, such as Reo, Studebaker, Hudson, Overland, Buick, Ford, Chevrolet, Dodge and Cadillac.

Anyone interested will be sent one free upon request. Address Dept. 210-G and state make of car you drive.

## H. J. DETTERICH ADVERTISING MANAGER OF BEARINGS SERVICE.

A. K. Hebner, general manager of the Bearings Service Co., has announced the appointment of H. J. Detterich as advertising manager of the company. Mr. Detterich, who takes up his new duties on April 15, leaves the Paige-Detroit Motor Car Co., where he has held the position of assistant advertising manager for the past two years. Previous to this he was connected with the advertising department of the Studebaker corporation. "In having Mr. Detterich come with our company," said Mr. Hebner, "we feel that we have a man who is exceptionally well fitted to fill this new position in our organization, which it has been necessary to create in order to have an executive who can devote all his time to the large volume of advertising incident to a company which has 22 branches and over 500 distributors."

## SIGNAL TRUCK WILL INCREASE PRODUCTION.

The Signal Motor Truck Co. will not be sold to the Paige-Detroit Motor Car Co., as it has become known that the offer submitted the passenger car manufacturer has been definitely rejected.

Plans have been made for increased production of Signal trucks as a result of the constant growing demand. There is also a report that government officers have been in Detroit looking over the company's plant and getting general information about the product. Only recently a contract to supply the government with Signal trucks was carried out by the Paige-Detroit Motor Car Co. for the Signal Motor Truck Co.

A number of prominent Detroit men offered to become interested, it is said, in the company. The stockholders for the Signal truck, however, decided that they were amply able to in every way look out for the financial details. The company's report shows the Signal to be in a healthy financial condition.

The Signal Motor Truck Co.'s product has a number of years' actual service to its credit and is distributed throughout the country by some of the most successful motor truck merchants. The factory affairs are in the hands of John Squires, general manager, and the sales manager is A. D. Kelley. The concern is manufacturing trucks, ranging in size from one to five tons, the list selling price being from $2000 to $5000.

"There have been a number of statements concerning the affairs of the Signal Motor Truck Co.," General Manager Squires said in answering inquiries. "But," he continued, "we have been too busy arranging for increased production to pay attention to reports of the purchase of the Signal Motor Truck Co. We, however, fully realize the merits of the Signal truck and our obligations to our distributors and customers. We have accordingly arranged our plans to make our future and that of our distributors and customers one to be proud of.

## CORK INSERT TRANSMISSION LININGS GIVE LONG SERVICE.

The cork insert lining was originated to make the planetary transmission easier of operation and more efficient through the elimination of slipping and in addition it also has been found to give many times the service life.

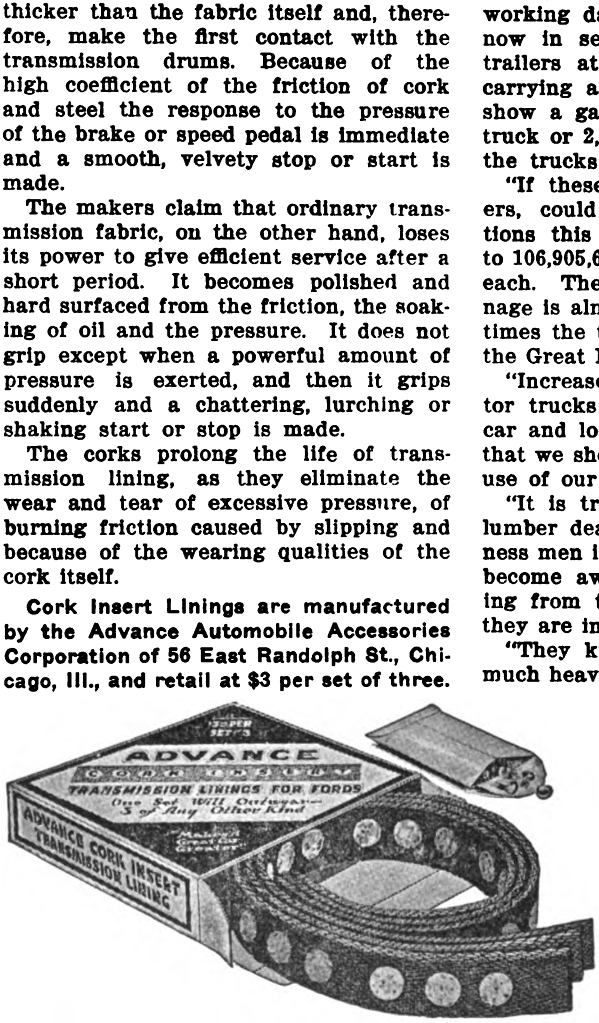
The lasting service of these linings is due to the gripping and wearing qualities of the cork inserts.

In the higher grades of transmission fabrics, buttons of cork are inserted at regular intervals. The corks are slightly thicker than the fabric itself and, therefore, make the first contact with the transmission drums. Because of the high coefficient of the friction of cork and steel the response to the pressure of the brake or speed pedal is immediate and a smooth, velvety stop or start is made.

The makers claim that ordinary transmission fabric, on the other hand, loses its power to give efficient service after a short period. It becomes polished and hard surfaced from the friction, the soaking of oil and the pressure. It does not grip except when a powerful amount of pressure is exerted, and then it grips suddenly and a chattering, lurching or shaking start or stop is made.

The corks prolong the life of transmission lining, as they eliminate the wear and tear of excessive pressure, of burning friction caused by slipping and because of the wearing qualities of the cork itself.

**Cork Insert Linings are manufactured by the Advance Automobile Accessories Corporation of 56 East Randolph St., Chicago, Ill., and retail at $3 per set of three.**


ADVANCE
TRANSMISSION LININGS FOR FORDS
One Set Will Outwear 3 of Any Other Kind
ADVANCE CORK INSERT TRANSMISSION LINING

**Complete Set of Cork Insert Transmission Lining with Fastenings for Ford Car.**

# *Semi-Trailers Will Relieve Freight Congestion*

### H. C. Fruehauf Submits Interesting Statistics on Haulage. Truck Capacity Not Utilized.

"If the 435,000 motor trucks in the United States were operated at 80 per cent. of the efficiency possible with semi-trailers, the total tonnage hauled by these units every 12 months would be equal to 1,423,635 train loads of 55 freight cars each, or eight times as much as these trucks are now estimated to be hauling annually," declared H. C. Fruehauf, general manager of the Fruehauf Trailer Co.

"According to recent estimates the 435,000 motor trucks in this country have an average load capacity of 2½ tons each. However, careful investigation developed the fact that the average motor truck operates at about 35 per cent. efficiency. That is to say that a big majority of the motor trucks are not loaded to their full capacity while being operated.

"Assuming that each truck makes an average of four trips per day for 300 working days a year, the motor trucks now in service if operated with semi-trailers at 80 per cent. efficiency, and carrying a load in one direction, would show a gain per year of 6144 tons per truck or 2,672,640 tons per annum on all the trucks in the United States.

"If these trucks, equipped with trailers, could carry loads in both directions this annual gain would be equal to 106,905,600 freight car loads of 50 tons each. The magnitude of this extra tonnage is almost inconceivable, but it is 53 times the total tonnage handled through the Great Lakes during 1917.

"Increased operating efficiency in motor trucks is imperative. The freight car and locomotive shortage is so great that we should make the widest and best use of our transportation facilities.

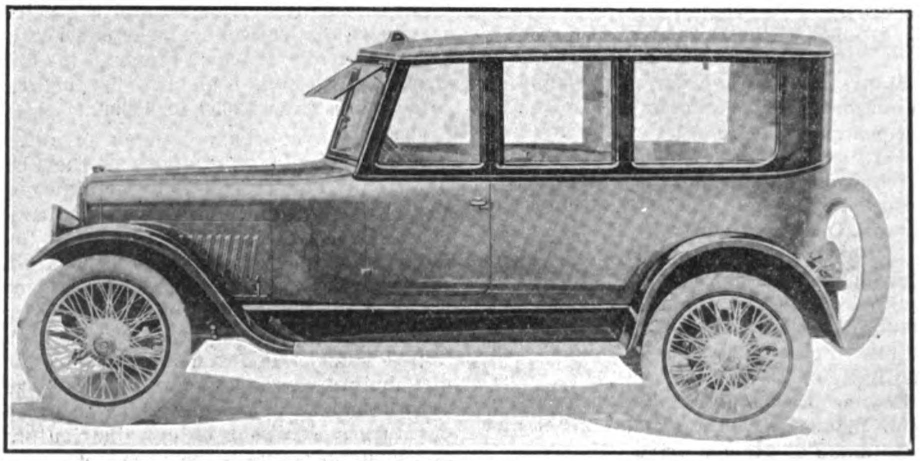
"It is true that many manufacturers, lumber dealers and operators, and business men in other fields of industry have become aware of the economies resulting from the use of semi-trailers. But they are in the great minority.

"They know that a horse can pull a much heavier load than it can carry, but they are slow to apply same reasoning to a motor truck.

"Our experience, based on practical demonstrations, has been that a semi-trailer and truck will haul three times as much as the truck alone—and over the same roads and under the same conditions. This fact goes to show that production of trucks for domestic use may be curtailed to a great extent, the present carrying capacity can be trebled.

# *New Paige Cars Are Very Distinctive*

**Bodies and Chassis Have Many Exclusive Features, Including Electric Gasoline Heater, Automatic Valve Cleaning and Polishing Device, New Paige Locking Device and New Type of Upholstery Springs. The Enclosed Models Are of the Convertible Type.**



**The Paige Convertible Sedan Model Six "55" Showing Individual Body Lines and Top Design.**

# NEW CONCERNS RECENTLY INCORPORATED

## Monthly Record of New Business Houses for which Charters Have Been Issued in the Various States and Classified According To Nature of Business

### NEWLY ORGANIZED MANUFACTURERS OF CARS.

**Dover, Del.;** The Wm. G. Adams Truck; $25,000; to manufacture motor trucks and automobiles.

**Dover, Del.;** All-American Truck Co.; $2,000,000; C. L. Rinlinger, M. M. Clancy, F. A. Armstrong.

**Dover, Del.;** Automobile Devices Co.; $300,000; to manufacture and sell automobiles and automobile parts; F. D. Buck, M. L. Horty, E. Longfield.

**Dover, Del.;** Hawkins Tractors, Inc.; $3,000,000; to manufacture tractors of all kinds; Irlin E. Jones, Lee Warren, James J. B. Coolidge.

**Dover, Del.;** Dependable Truck and Tractor Co.; $750,000; M. L. Rogers, M. L. Gatchell, L. A. Irwin.

**Dover, Del.;** Wilmington Overland Co.; $10,000; to manufacture cars of all kinds; Guy S. Ford, S. D. Townsend, Jr., A. F. Huser.

**Wilmington, Del.;** Goodwin Car and Manufacturing Co., Inc.; $250,000; to build cars of all kinds.

**Wilmington, Del.;** Premier Motor Products, Inc.; $250,000; to manufacture and deal in tires and automobiles.

**Detroit, Mich.;** Lozier Motor Co.; $200,000; to manufacture automobiles; Theo. Friedburg, Leopold Landsberger, W. S. Grant.

**New Rochelle, N. Y.;** Hopper Automobile Sales Co., Inc.; to manufacture automobiles, boats, locomotives and flying machines; Thomas T. Hopper, C. M. Thorne. Donald C. Muhleman.

**New York, N. Y.;** Equitable Tire and Rubber Co., Inc.; $1000; to manufacture automobile tires; Sydney Bernheim, Catherine A. Weldon, Harry H. Jacobson.

**New York, N. Y.;** Hollander Motors, Ltd.; $100,000; to manufacture automobiles, motors and airplanes; Elmer R. Hollander, George Siegmund, John Lurie.

**New York, N. Y.;** Superior Motor Equipment Co.; $400,000; to manufacture automobiles and parts for same; A. W. Britton, Samuel R. Howard, George V. Reilly.

**Syracuse, N. Y.;** Britton Trucks; $15,000; D. Kopenhafer, D. Dunfee, J. Dunfee.

### PARTS AND FITTINGS MAKERS INCORPORATED.

**Wilmington, Del.;** The E. & W. Manufacturing Co.; $225,000; to manufacture motors of all kinds.

**Wilmington, Del.;** The Missouri Currer Tiller and Tractor Corporation; $200,000; to make farm implements of all kinds; E. M. Haslan, E. Lemon, A. McGongle.

**Wilmington, Del.;** Piston Valve Motor Co.; $300,000; to manufacture internal combustion engines.

**Davenport, Ia.;** John P. Hand Co.; $20,000; to deal in storage batteries and electrical equipment for both passenger cars and motor trucks, automobiles and accessories and to operate an automobile repair shop; John P. Hand, Joseph Lewis, B. Simon.

**Great Falls, Mont.;** Northwest Storage Battery Co.; $20,000; Granville G. McPherson, Donald C. Gordan, Sadie A. Gordon.

**Elizabeth, N. J.;** D. & D. Machinery and Tool Co.; $50,000; Otto H. Dissman, Walter Decker, Louise Buehler.

**Newark, N. J.;** City Auto Radiator Co.; $10,000; George P. McDonough, Samuel Zucker.

**Troy, N. Y.;** The Kingsley Motors Storage Co.; $25,000; P. J. and J. Kingsley, J. J. Zaquatt.

**Rochester, N. Y.;** The Constock Parachutic Airplane Co., Inc.; $100,000; to manufacture and deal in all kinds of motors, balloons, aeroplanes; F. M. Constock, I. Hamilton, H. V. Walker.

**New York, N. Y.;** H. & S. Shock Absorber Co.; $100,000; E. Siegel, F. Schultz, E. Olson.

**New York, N. Y.;** Morgan Auto Alarm Corporation; $150,000; to deal in auto engines and appliances; J. C. Dobson, W. J. McKenna, Jr., W. S. Smith.

**New York, N. Y.;** Ross Axle Co.; $90,000; B. F. Anderson, T. K. Peters, J. W. Lovell.

**West Brighton, N. Y.;** Rowholt Motor Co.; $5000; H. Rowholt, E. A. Rowholt, J. Point.

**Alliance, O.;** Alliance Automobile and Tool Co.; $20,000; J. A. McCaffrey, Geo. W. Fertin, Charles S. Luce, John P. Schmidt, C. S. Parker, William Stermer.

**Canton, O.;** Evans Motor Co.; $50,000; Linn Colbert, George R. Grant, Harvey H. Barker, T. Oscar Evans, Francis Metz.

**Sandusky, O.;** Griswold-Wagg Motor Co.; $10,000; Glen Willis Griswold, August W. Allendorf, Fred H. Zerbe, Nelson E. Wagg, Claude J. Minor.

**Toledo, O.;** Britton Automobile Signal Co.; $25,000; Paul T. Gaynor, William H. Fagan, Margaret F. Kaley, Blanche O'Brien.

**Toledo, O.;** Doan Motor Co.; $30,000; Charles E. Doan, Andrew J. Jordan.

### GARAGES AND REPAIR SHOPS.

**Wilmington, Del.;** Lincoln Garage and Auto Supply Co.; $50,000; to operate a garage.

**Chicago, Ill.;** The Exchange Garage; $2000; Charles J. Simon, James T. Barlett, P. J. Murphy.

**Chicago, Ill.;** Garfield Service Station, Inc.; $2500; C. J. Bassler, G. L. Rose, R. F. Bippus.

**Park Ridge, Ill.;** Park Ridge Garage and Machine Shop; $5000; John A. Voask, L. S. Wintersteen, H. A. Burkett.

**Detroit, Mich.;** Grand Service and Sales Co.; $1000; to conduct a garage; W. J. Yeager, G. W. Misner, J. L. Brand.

**Anaconda, Mont.;** The Yellowstone Trail Garage; $30,000; to conduct a general garage and repair business; R. Swan, Edward Swan, E. N. Swan.

**Kingston, N. Y.;** Stuyvesant Garage; $25,000; A. and E. C. and L. E. Chambers.

**New York, N. Y.;** The M. & M. Garage, Inc.; $50,000; to conduct a garage business; A. Morris, J. Maybaum.

**New York, N. Y.;** The J. P. Garage; $6000; to conduct a garage; B. Elfand, B. Farfinkel, J. Penzenik.

**Canton, O.;** Walnut Garage Co.; $20,000; Frank Jackson, William S. Yohe.

**Cleveland, O.;** Parshall Battery Service Co.; $20,000; C. B. Bayly, E. M. Kirley, Harvey Spika, Alinton DeWitt, W. J. Hawley.

**Conneaut, O.;** City Garage Co.; $10,000; T. D. Sawdey, H. B. Thornton, W. F. Cody, Harriet Cody, Pearl Thornton.

**Philadelphia, Pa.;** Lincoln Garage and Auto Supply Co.; $50,000; Morris Stein, Solomon I. Stein, Peter D. Mallison.

**Milwaukee, Wis.;** The Bursinger Durkin Co.; to conduct a garage and show room; D. W. Durkin, Frank Bursinger.

### ACCESSORIES, SUPPLIES AND EQUIPMENT.

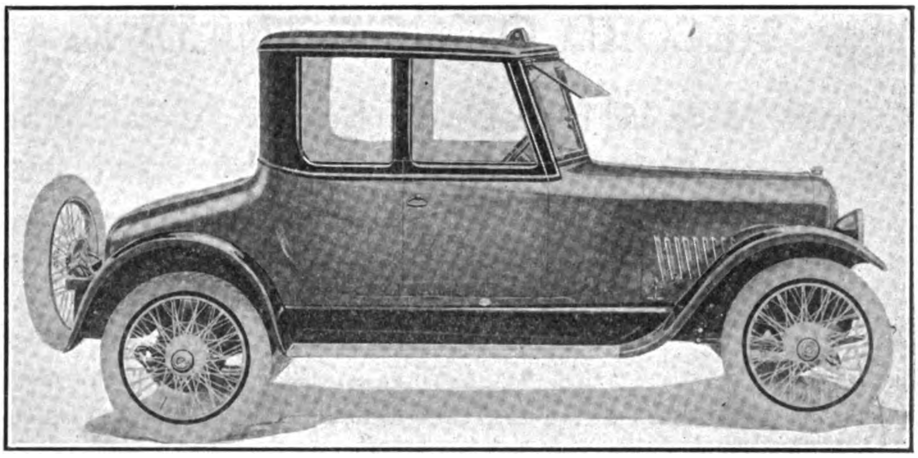
**Los Angeles, Cal.;** The Akron Rubber Co.; $25,000; Dave F. Smith.

**San Francisco, Cal.;** Union Tire and Rubber Co.; $250,000; to deal in automobile tires and tubes; C. E. Trezona, W. M. Carne, T. Stevens, L. A. Von Tagen, L. A. Hilborn, C. Meyer, P. F. Unger.

**Dover, Del.;** Detroit Fuelless Motor Corporation; $500,000; L. B. Phillips, J. B. Bailey.

**Dover, Del.;** Hercules Oil Co.; $2,000,000; to obtain oil and natural gas from the earth and market same; William F. O'Keefe, George G. Steigler, J. H. Dowdell.

**Dover, Del.;** Manor Garage Co.; $25,000; to deal in automobiles and supplies for



**Paige Model "55" Coupe, Showing Full Side View, Wide Door, Low Body Lines and Graceful Back.**

same and to also conduct a garage.

**Dover, Del.;** The Tuxling Oil and Refining Corporation; $2,000,000; to drill oil and market it; C. L. Rimlinger, M. M. Clancy, F. A. Armstrong.

**Chicago, Ill.;** Acorn Rubber and Tire Corporation; $50,000; Jacob Sandrovitz, David Wildman, Emil Borman.

**Chicago, Ill.;** Protext Tire Gauge Co.; $2000; E. R. King, Otila Czekala, M. E. Gunther.

**Ft. Wayne, Ind.;** Lomont & Co.; $75,000; to sell tires, automobiles supplies and accessories; Clemont J. Lomont, John A. Lomont, J. A. Becker.

**Indianapolis, Ind.;** Ever-Last Tread Co.; $10,000; to deal in automobile tires; Arthur E. Holden, Viona P. Holden, Clarence A. Call.

**Indianapolis, Ind.;** Steel Vehicle Wheel Tire Corp.; $20,000; T. S. McGehee, C. A. Wofford, C. R. Wofford.

**Indianapolis, Ind.;** United Auto Agency Co.; $10,000; Adolph Levy, L. M. Levy, F. F. Levy.

**Council Bluffs, Ia.;** Mid-West Co-Operative Tire Co.; to deal in automobile tires and accessories; L. Kruger, S. Kruger.

**Covington, Ky.;** Covington Tire and Rubber Co.; $5000; to manufacture, retread and repair inner tubes and tire accessories; William B. Whitacre, F. L. Richards, F. M. Richards.

**Grand Rapids, Mich.;** The Two-in-One Tire Co.; $19,500; Reuben Roden, Isaac Warsaw, Benjamin Rose.

**Newark, N. J.;** Miller Tire Co.; $25,000; Charles D. Sanderson, Sidney G. Bedworth.

**Buffalo, N. Y.;** Cleanall Windshield Corporation; $75,000; J. R. Bedell, C. M. Rooney, F. M. Rooney.

**Buffalo, N. Y.;** Dynamo and Motor Exchange, Inc.; $10,000; dynamos, electrical appliances and equipment; Frank J. Martin, John H. Farrell, Albert J. Zissonette.

**Buffalo, N. Y.;** The Marvel Oil Rubber Co.; $300,000; John H. McLean, Levi R. Lupton, George B. Burd.

**Hempstead, L. I.;** Storey Ruber Co.; $625,000; R. Jenkins, E. D. and E. G. Storey.

**New York, N. Y.;** Central Park Tire Co.; $5000; A. Kaiser, W. E. Auchimbaugh, Z. M. Delman.

**New York, N. Y.;** Durable Tire Co.; $10,000; S. A. Paul, D. D. Deutsch, J. L. Diamond.

**New York, N. Y.;** The M J. Manufacturing Co.; to engage in the lock joint tubing business; M. J. Ford, B. W. Tucker, I. Goldberg.

**New York, N. Y.;** Naugatuck Tire and Rubber Co.; $100,000; M. Marcus, D. and L. Bernstein.

**New York, N. Y.;** Simplex Tire Co.; $10,000; G. Eiseman, C. H. Meyers, A. H. Biern.

**Rochester, N. Y.;** Legal Level Light Co.; $20,000; to deal in automobile accessories; D. T. Roach, I. Smith, T. B. Shanahan.

**Cleveland, O.;** Cleveland Flexible Steel Tire Co.; $5000; G. O. Bell, John Keavey, F. P. Wellinger, Geo. W. McIlrath, Jack Taylor.

**Cleveland, O.;** Dueo-Serve Co.; $1000; to sell automobile accessories; Robert S. English, Robert A. Kelly, Harry E. Davis, Michael J. Byeth, William L. Parker.

**Philadelphia, Pa.;** The Murray Motor Sales Co.; $10,000; John McGlinn.

**Nashville, Tenn.;** The Motor Specialties Co.; $10,000; B. A. Porter, E. C. Newman, S. W. Portlock, F. S. Omberg, J. H. LeClerc.

**Nashville, Tenn;** Superior Rebuilt Tire Co.; $1000; B. Kottler, Ike Kottier, S. Kottler, Ben Frank, Harry Kisber.

**Waco, Tex.;** Archenhold Automobile and Accessory Co.; $50,000; Charles Rosenthal, J. M. Nussbaum, Harry Archenhold.

## DEALERS IN AUTOMOBILES AND MOTOR TRUCKS.

**Dover, Del.;** Killan Transportation Co.; $100,000; J. W. Crandall, I. W. Bonner, B. D. Alsop.

**Chicago, Ill.;** American Automobilists' Service Association; Francis J. Sullivan, Benjamin F. Nicholson, M. L. Hayes.

**Peoria, Ill.;** Cadillac Motor Sales Co.; $20,000; Albert C. Salzenstein, Walter A. Wood, Charles Vohern.

**Attica, Ind.;** W. C. Taxi Co.; $1000; to conduct a taxi and transfer business; John R. Craig, Harry M. Wagner, Vera S. Craig.

**Indianapolis, Ind.;** S. A. Deming Co.. $100,000; to buy and sell automobiles; Sherlie A. Deming, Charles O. Britton, A. M. Graham.

**Indianapolis, Ind.;** United Auto Agency; $10,000; Adolph Levy, L. M. Levy, F. F. Levy.

**Salina, Kan.;** Central Kansas Motor Co.; $25,000.

**Shreveport, La.;** W. G. Patterson Co.; $50,000; to sell automobiles and motor trucks; R. M. Patterson, W. G. Patterson, Guy O. Nevin.

**Morristown, N. J.;** Motor Transportation Cont. Co.; $10,000; Rudolph Herms, Jr., Thomas W. Gray, William G. McCormick.

**Newark, N. J.;** Clydesdale Motor Truck Co. of New Jersey; $125,000; to deal in motor trucks; Bernard C. McKenna, Joseph J. Tully, Stewart A. Farrell.

**Newark, N. J.;** Standard Products Corporation; $50,000; to deal in automobiles; Saul Wiener, Heloise M. Weiner, Jacques J. Manheim.

**Passaic, N. J.;** H. & H. Trucking Co., Inc.; $50,000; to do general hauling; Thomas H. Hogan, Russell G. Hickey, Daniel E. Seal.

**Paterson, N. J.;** L. W. Ward Co.; $50,000; James McGold, Roy M. Stadkiff, Lilian E. Ward, L. Whittingham Ward.

**Albany, N. Y.;** Kelly-Dennin Co., Inc.; $100,000; to deal in automobiles and to conduct a garage; W. H. Dennin, C. C. Kelly, J. C. Fitzgerald.

**Albany, N. Y.;** Wright-Lawes Motor Corporation; $30,000; to deal in motor trucks; F. A. Wright, C. A. E. Lawes, G. A. Hibbard.

**Brooklyn, N. Y.;** William Moelich; $6000; to engage in the truck and storage business; H. Schwartz, A. L. Morelich, W. Morelich.

**Bronx, N. Y.;** Bronx Star Auto Wrecking Co.; $1000; **Joseph Lieberman, Philip** Roshafsky, Celia Roshafsky.

**Hoosick Falls, N. Y.;** John Moseley & Co.; $20,000; to conduct an automobile business; J. Moseley, A. N. Gardner, C. A. Duross.

**New York, N. Y.;** Forwarders Auto Trucking Corporation; $10,000; J. E. Roshers, R. R. V. Powers, H. E. Johnson.

**New York, N. Y.;** Greeley Automobile Trucking Co.; $600; to cart and do expressing and trucking; Mary C. Berman, Alice Berman, Elsie A. Kleber.

**New York, N. Y.;** The Hoffman Owners, Inc.; $1500; to operate taxi cabs; John J McDonald, William E. Abbott, Frank B. Taylor.

**New York, N. Y.;** Larrabee-Deyo Motor Truck Sales Co.; $30,000; to deal in autos and to conduct a garage business; M. Swering, H. Albers, Jr., N. I. Sachs.

**New York, N. Y.;** L. B. D. Corporation; $2000; motor vehicles, repairing and trucking; Adolph J. Lunde, Alexander Bunting, Charles W. Derieth.

**New York, N. Y.;** Metropolitan Co-Operative Co., Inc.; $5000; Isidore Liebowitz, Rebecca Weintraub, Max Schachter.

**New York, N. Y.;** Midland Trading Corporation; $30,000; to deal in autos and trucks; M. J. Clea, E. R. Levy.

**New York, N. Y.;** Standard Trucking Co.; $20,000; R. H. Gay, H. W. Morgard, N. S. Schless.

**Rochester, N. Y.;** Empire State Motor Transport Lines, Inc.; $300,000; to do trucking and draying; O. W. Morton, F. P. Hunt, A. G. Palmer.

**Troy, N. Y.;** The Kingsley Motors Storage Co.; $625,000; R. Jenkins, E. D. Storey, E. G. Storey.

**Philadelphia, Pa.;** The Murray Motor Sales Co.; $10,000; John McGlinn.

**Pittsburgh, Pa.;** Sawders-Murray Co.; $20,000; to deal in motor vehicles; E. P. Sawders, treasurer.

**Akron, O.;** Paragon Motor Freight Co.; $50,000; Max Bogatin, president.

**Chillicothe, O.;** Buckeye Automobile and Taxi Cab Co.; $10,000; N. N. Weber, F. Wilson, Henry Knight, L. O. Wadley, C. D. Saviers.

**Toledo, O.;** Trustworthy Automobile Co.; $500; John Betz, Henry Stanger, Edward Paponfuss, John F. Broad, J. Nea Saxby.

**Youngstown, O.;** Brockway Motor Truck Co.; $10,000; A. Brockway, Lewis Stocker, Kalner T. Sanders, Arthur Nelson, Frank L. Ocsch.

**Youngstown, O.;** Interstate Automobile Co.; $40,000; S. A. Pfau, William E. Pfau, C. E. Sederland, W. H. Vanskiver, George H. Coller.

**Tulsa, Okla;** Lahr Auto Co.; $250; M. A. Lahr, T. D. Cleage, F. S. Craver.

**Barnwell, S. C.;** The Hagoos-Jennings Auto Co.; $10,000; M. B. Hagoos, W. C. Jennings, W. D. Harley.

**Florence, S. C.;** The Florence Overland Sales Co.; $5000; to do a general automobile business; Charles E. Commander and W. B. Rollins.

**Sumter, S. C.;** The Anchor Auto and Truck Co.; $5000; president, C. G. Rowland; vice president, secretary and treasurer, S. K. Rowland.

**Aberdeen, S. D.;** A. K. S. Manufacturing Co.; $25,000; to deal in automobile supplies; T. H. Livingston, H. T. Porter, J. C. McKinney.

**Memphis, Tenn.;** The Preston Motor Sales Co.; $25,000; W. C. Hickman, G. D. Siler, W. H. Williams, Karl K. Wilkes, H. C. Pearson.

**Beaumont, Tex.;** Doster Motor Car Co.; $10,000; F. C. Weber, J. L. Cunningham, I. F. Doster.

**Norfolk, Va.;** Springer-Martin Co.; $25,000; to conduct an automobile business; John E. Springer, R. N. Martin.

# RECORD OF NEW BUILDING PLANS IN APRIL

## Contracts Made and Plans Contemplated for Alterations or the Building of Garages, Repair Shops, Service Stations and New Plants.

### CONTEMPLATED PLANS AND SPECIFICATIONS.

**Anniston, Ala.;** J. C. Wheeler Motor Co.; one-story garage, 120x140.

**Gadsden, Ala.;** A. D. Simpson; one-story garage, 100x125.

**Hartford, Ala.;** F. N. Isaacs; one-story garage; $25,000.

**McKittrick, Ala.;** McKittrick Auto Supply Co.; one-story garage, 80x150.

**Pittsburg, Ala.;** Ward & Weigle; one-story garage, 50x125.

**Russellville, Ala.;** R. C. and C. E. Wilson, Jr.; one-story garage, 50x144; $14,000.

**Visalia, Ala.;** F. H. Whipple; three-story garage, $30,000.

**Fort Smith, Ark.;** Eller & Wright; one-story garage, 75x144.

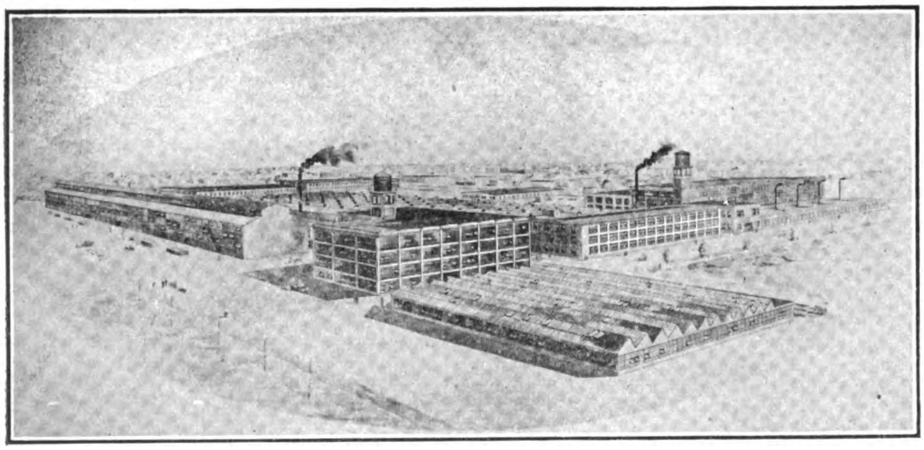
**Little Rock, Ark.;** John and James O'Brien; one-story brick garage, 50x150; lessee, Cook Automobile Co.

**Little Rock, Ark.;** W. A. Benton; one-story sales and service station, 50x140; $7000.

**Little Rock, Ark.;** W. A. Smith; one-story brick garage, 89x90; $6000.

**Newport, Ark.;** P. H. Van Dyke; one-story garage and show room; $20,000.

**Texarkana, Ark.;** S. A. Collom; one-story brick garage; concrete floor; lessee, Liddell Motor Co.



**The Detroit Plant of the Continental Motors Corporation, the Largest Manufacturer of Internal Combustion Engines in the World.**

**Los Angeles, Cal.;** Central Pacific Improvement Co.; one-story garage at Main and Pico streets; $9625.

**Los Angeles, Cal.;** Curtain Estate Co.; one-story garage, 70x150; $1900.

**Los Angeles, Cal.;** Mitchell Bros.; one-story garage, 50x120.

**Manteca, Cal.;** N. Wisecarver; one-story garage, 50x130.

**Santa Ana, Cal.;** E. D. Waffle; one-story garage; $4000.

**Denver, Col.;** E. H. Radetsky; one-story garage; $10,000.

**Denver, Col.;** L. R. Bach; one-story garage, 60x100; $15,000.

**Bridgeport, Conn.;** James Romanelli; one-story garage, 95x80; at 594 Pembroke street; $12,000.

**Bridgeport, Conn.;** Zimmer Bros.; one-story garage, 60x160; $20,000.

**Derby, Conn.;** C. A. Page; one-story garage; $10,000.

**Waterbury, Conn.;** H. W. Connor Co., 453 Meadow street; one-story public garage, 97x156; $25,000.

**Waterbury, Conn.;** John Lang; one-story garage, 62x39; $7500.

**Wilmington, Del.;** Dr. S. G. Elbert; one-story garage at 10th and French streets, 100x115.

**Wilmington, Del.;** J. and E. H. Leonard; one-story garage, 40x40.

**Fort Lauderdale, Fla.;** Broward Sales Co.; one-story garage, 50x135.

**Jacksonville, Fla.;** H. Green; two-story brick garage; $3000.

**Enterprise, Ida.;** Amos Holt; one-story garage; $10,000.

**Payette, Ida.;** Payette Modern Garage; one-story garage, 90x145.

**Cairo, Ill.;** Guy Eichenberger; one-story garage at 810-12 Commercial avenue; 50x120.

**Cairo, Ill.;** Interstate Motor Co.; one-story garage, 50x100.

**Cambridge, Ill.;** William Hedstrom; one-story public garage, 60x70; $8000.

**Chicago, Ill.;** I. Schmitt; one-story garage at 2426 Prairie avenue; $16,000.

**Chicago, Ill.;** S. W. Stevens; one-story garage at 215-21 W. Washington street; $175,000.

**Chicago, Ill.;** J. H. Kirk; one-story garage at 311 Emerald avenue; $12,000.

**Chicago, Ill.;** Robb Motor Co.; one-story garage at 2808-10 Sheffield avenue; $76,000.

**Chicago, Ill.;** Marshall, Field & Co.; one-story garage, 238x300; $400,000.

**Chicago, Ill.;** A. Wotersdorf, 138 N. La Salle street; three-story public garage, 100x101.

**Chicago, Ill.;** Davidson & Weiss, 53 W. Jackson boulevard; one-story garage, 70x135.

**Chicago, Ill.;** G. Browberg; one-story garage at 1337 N. Oakley avenue, 75x125; $15,000.

**Chicago, Ill.;** John Hamilton; one-story garage, 149x122.

**Decatur, Ill.;** Pierce & Cladwell; one-story garage, 50x150.

**Evanston, Ill.;** Lewis J. Sherland; one-story garage and salesroom, 65x210; $18,000.

**Georgetown, Ill.;** J. R. Dillon; one-story garage, 60x120.

**Gilson, Ill.;** Leo Pickeral; one-story garage, 100x60.

**Henry, Ill.;** J. E. Barry & Co.; two-story garage, 40x80; $10,000.

**Lincoln, Ill.;** Langellier Motor Co.; one-story garage at Kickapoo and Pekin streets; $30,000.

**Manchester, Ill.;** J. E. Osborne; one-story garage, 40x60.

**Nokomis, Ill.;** Schneider & Bailey; one-story garage, 46x80.

**Ridgefield, Ill.;** Earl Abbott; one-story garage, 36x66; $3500.

**Toluca, Ill.;** R. A. Mannen; one-story garage, 48x60.

**Tremont, Ill.;** F. L. Hinman; one-story garage, 60x120; $7000.

**Carmi, Ind.;** Elliott & Endicott Co.; one-story garage; $15,000.

**Lafayette, Ind.;** Thomas Wilson, care Lafayette Loan and Trust Co.; one and two-story garage, 66x126.

**Lebanon, Ind.;** Indiana Condensed Milk Co.; one-story service garage, 104x36.8.

**Le Mars, Ind.;** Ringstud Motor Co., one-story garage, 72x100.

**Mediapolis, Ind.;** Fred C. Selzer; one-story garage, 42x100.

**Mt. Vernon, Ind.;** Keck-Gonnerman Co.; one-story garage; $40,000.

**Seymour, Ind.;** R. T. Buhner; one-story garage, 50x165.

**Tipton, Ind.;** Charles H. Baldwin; one-story garage; $10,000.

**Tollestoi, Ind.;** Carl E. Benson; one-story garage, 50x80.

**Alta, Ia.;** Kindwall Auto Co.; one-story garage, 75x100.

**Burlington, Ia.;** Iowa-Haynes Motor Car Co.; one-story garage, 60x119.

**Burlington, Ia.;** F. W. Woellhaf; one-story garage; $12,000.

**Mt. Ayer, Ia.;** D. Sullivan; one-story public garage, 55x120.

**Sioux City, Ia.;** C. E. Palone, care Q. Palmer, Flint Co.; one-story garage, 50x100; $10,000.

**Solon, Ia.;** F. J. Bittner; one-story garage, 50x115.

**Winfield, Ia.;** George Bloomer; one-story garage, 48x78.

**Clay Centre, Kan.;** E. H. Swenson; one-story garage, 50x120.

**Clay Centre, Kan.;** G. L. Woodbury; one-story garage, 40x100.

**Herkimer, Kan.;** J. H. Krug; one-story garage, 50x130.

**Iola, Kan.;** Frank H. Lindsly; one-story garage, 150x50.

**Osage City, Kan.;** Miller & Schroder; one-story garage; $10,000.

**Paola, Kan.;** Paul Russell; one-story garage, 60x170.

**Salina, Kan.;** Edward Jones; one-story garage, 50x110; $11,000.

**Smith Centre, Kan.;** Ray Cole; one-story garage, 40x90.

**Wichita, Kan.;** Shaw-Snyder Motor Co.; one-story garage and salesroom, 50x150.

**Wichita, Kan.;** W. A. Garlits; one-story garage at Water and Waterman streets, 50x140.

**Wichita, Kan.;** Cain Motor Car Co.; one-story garage, 50x140.

**Arlington, Ky.;** Neville Automobile Co.; one-story garage, 40x90.

**Maysville, Ky.;** O. L. Bartlett; one-story garage; $10,000.

**Paducah, Ky.;** Gus Edwards Motor Sales Co.; one-story garage, 46x160.

**Lake Charles, La.;** Huber Motor Co.; one-story garage, 72x136; $30,000.

**Shreveport, La.;** Nabors Garage; one-story garage, 100x100.

**Auburn, Me.;** W. H. Bailey & Son; one-story garage, 50x100.

**Portland, Me.;** David Finkelman; two-story garage, 45x100, at 8 Federal St.

**Portland, Me.;** Gilson Auto Co.; one-story garage, 50x90; $20,000.

**Portland, Me.;** Peterson Motor Co.; one-story garage, 75x50; $12,000.

**Portland, Me.;** A. M. Spear, Jr.; one-story garage and salesroom at 122-26 High street; $20,000.

**Baltimore, Md.;** J. M. Curran; one-story garage at Garrison lane and Franklin street, 50x200.

**Baltimore, Md.;** City Co. Realty Co., 2 E. Lexington street; two-story garage at Hillsdale and Park Heights avenue, 50x130.

**Baltimore, Md.;** Sam Cooper, 2036 Brookfield avenue; one-story commercial garage at 37-41 W. Cross street, 50x163

**Baltimore, Md.;** Emerson Morgan Coal Co., 20 South Paul street; one-story brick garage, 35x135.

**Baltimore, Md.;** Rosenthal & Merin; one-story garage at 1640-42 E. Fayette, 18x98.

**Baltimore, Md.;** Charles C. Broring, 2800 Hartford road, eight garages on south side of Hiller road, near Hugo street; two to be 16x10 and six 10x20.

**Baltimore, Md.;** Autogenous Welding and Equipment Co.; one-story garage, 96x33; at 1221-23 Maryland avenue.

**Baltimore, Md.;** Enterprise Fuel Co.; one-story garage, 50x22; at 21st and Oak streets.

**Hagerstown, Md.;** Imperial Auto Wheel Co., 7 Court place; one-story fireproof factory building.

**Athol, Mass.;** Athol Garage; one-story garage and salesroom, 147x44, at 51 School street; $1000.

**Ayer, Mass.;** Ford & Lyon; one-story garage, 122x56; $3500.

**Boston, Mass.;** Walk Hill Garage Co.; one-story garage at Blue Hill and Walk Hill streets; $25,000.

**Boston, Mass.;** S. S. Pierce Co.; one-story garage and salesroom, 62x125; $60,000.

**Boston, Mass.;** Philip Castelnovo; one-story garage, 20x82, at 37 Glendale street; $3000.

**Boston, Mass.;** Nathan L. Deutch; one-story garage at 1039 Bennington street, 75x120; $35,000.

**Boston, Mass.;** Margaret Craddock; two-story garage at 34 Warren street, 70x90; $40,000.

**Boston, Mass.;** Abe Lobel; one-story garage at 1243 Blue Hill avenue, 190x120.

**Boston, Mass.;** Charles W. Muldoon; one-story garage at 1621 Blue Hill avenue, 20x50.

**Boston, Mass.;** Lalime & Partridge; one-story garage and salesroom at 351 Huntington avenue, 110x91; $150,000.

**Clinton, Mass.;** Napoleon J. Bousquet; one-story garage, 40x60, at 375 High street; $3000.

**Brookline, Mass.;** George H. Abbott, 45 Babcock street; one-story private garage, 77x28; $6000.

**Danvers, Mass.;** Luciano Zollo; one-story garage, 165x64.

**Everett, Mass.;** Frank Ferdinand; one-story garage, 100x140; $25,000.

**Fall River, Mass.;** Joseph N. Ganon; one-story garage, 52x124; $6500.

**Lawrence, Mass.;** Henry N. Peabody; one-story garage at 366-74 Broadway, 265x94.

**Lawrence, Mass.;** John F. Haffner; one-story garage, 40x60; $3000.

**Leominster, Mass.;** William McAuley; one-story garage, 40x50; $2500.

**New Bedford, Mass.;** Frank Hurd; one-story garage, 30x40, at 30 Allen street; $25,000.

**Newton, Mass.;** Newton Centre Directorate, Inc., 79 Milk street, Boston; one-story private garage, 70x20; $35,000.

**Newton, Mass.;** Elmwood Investment Co.; one-story garage, 60x150; $25,000.

**Revere, Mass.;** Barnet Wolek; one-story garage, 108x100; $25,000.

**Somerville, Mass.;** John Magneu; one-story garage at 110 Central street, 90x20; $9000.

**Springfield, Mass.;** Springfield Motor Car Co. Inc.; one-story garage, 50x120.

**Taunton, Mass.;** Brownell & Burt; one-story garage at 10 Washington street, 49x158; $15,000.

**Taunton, Mass.;** L. B. Goward, 73 Winthrop street, one and two-story public garage, 90x135; $17,000.

**Southbridge, Mass.;** C. R. Stone; one-story garage, 50x50; $3000.

**Watertown, Mass.;** Thomas J. McHugh; one-story garage at 264 N. Beacon street, 100x155; $10,000.

**Watertown, Mass.;** M. Karajian; one-story garage at Mt. Auburn and Prentiss streets, 25x50.

**West Roxbury, Mass.;** Rowe Contracting Co.; one-story garage at 1222 Centre street, 64x97; $15,000.

**Worcester, Mass.;** Clarinda Collet; one-story garage at 32 Salem street, 28x50.

**Big Rapids, Mich.;** Turner, Crimmins & Waters; one-story garage, 45x120.

**Detroit, Mich.;** Hamburger Bros., Farwell building; one-story garage, 100x160; $20,000.

**Thompsonville, Mich.;** Hulius Hale; one-story garage, 30x100.

**Clear Lake, Minn.;** Rousher & Umboldt; one-story public garage, 66x96.

**Fairmont, Minn.;** Standard Oil Co.; one-story oil filling station, 15x24; $3000.

**Ironton, Minn.;** Peck & Sullivan; one-story garage, 25x50.

**Minneapolis, Minn.;** Charles E. Engram, 2836 Portland avenue; one-story public garage, 50x100; $10,000.

**Lewiston, Minn.;** H. Krenzke; one-story garage, 40x80.

**Redwood Falls, Minn.;** P. E. Wilcox; one-story public garage, 40x100.

**Roseau, Minn.;** Petterson & Nelson; one-story garage, 50x70.

**Brunswick, Mo.;** Walter H. Meyer; one-story garage, 40x100.

**Charleston, Mo.;** Paul B. Moore; one-story garage, 45x166; $14,000.

**Charleston, Mo.;** Standard Oil Co.; one-story filling station; $8000.

**Joplin, Mo.;** Russell Davis; two-story garage, 100x120; $18,000.

**Kansas City, Mo.;** Fishman Realty Co., 405 Gloyd building; one-story garage, 100x120; $15,000.

**Moberly, Mo.;** J. C. O'Keefe; 1½-story private garage, 25x30; $3500.

**Ridgeway, Mo.;** A. E. Dale; one-story garage, 30x44.

**St. Louis, Mo.;** N. Peters, 3503 Palm street; one-story private garage, 26x30; $3500.

**St. Louis, Mo.;** Saum & Saum, 625 Chestnut street; one-story public garage, 79x100; $40,000.

**St. Louis, Mo.;** Samuel Sheppard; one-story garage at 435 Euclid avenue, 25x150.

**Washington, Mo.;** Henry Hartbauer; one-story garage, 31x50.

**Williamstown, Mo.;** N. Ford & Son; one-story garage, 160x100.

**Dillon, Mont.;** Beaverhead Motors Co.; one-story garage, 50x115.

**Plentywood, Mont.;** R. E. Lang; one-story garage, 25x140.

**Arthur, Neb.;** H. Walker; one-story garage, 30x45.

**Cozard, Neb.;** U. Harrison; one-story garage, 50x140; $15,000.

**Edgar, Neb.;** McKinney Garage; one-story garage, 50x140.

**Holdrege, Neb.;** N. H. Kronquist; one-story garage, 75x120; $12,000.

**Kearney, Neb.;** J. W. Patterson; one-story garage, 125x56; $10,000.

**Omaha, Neb.;** McCaffrey Motor Co.; three-story garage, 66x132.

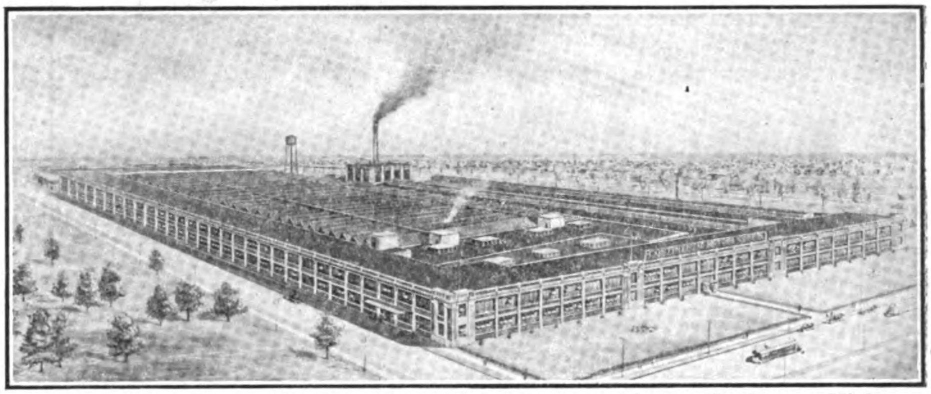
**Laconia, N. H.;** Laconia Hotel Co.; one-story garage, 80x15; $20,000.

**Manchester, N. H.;** Burke Brothers; one-story garage; $18,000.

**Newark, N. J.;** Jacob Skolnik Co.; 33 Somerset street; one-story public garage, 44x100; $8000.

**Newark, N. J.;** Welden Realty Co.; one-story garage, at 115 Chester avenue, 72x73.

**Plainfield, N. J.;** Hudson Auto Co.; one-story garage, 50x80.


Extensive Plant of the Continental Motors Corporation at Muskegon, Mich.

**Brooklyn, N. Y.;** William J. Auer, 1017 Willoughby avenue; one-story garage, 50x71; $2500.

**Brooklyn, N. Y.;** Fried & Eig, care Tobias Goldstone, 50 Graham avenue; one-story public garage, 125x100x75; $22,000.

**Brooklyn, N. Y.;** Snedeker Garage Co.; one-story garage, 100x100; $30,000.

**Brooklyn, N. Y.;** Landcuf Real Estate Co. 215 Montague street; one-story public garage, 140x132; $35,000.

**Brooklyn, N. Y.;** Walter R. Davies, 68 William stret, New York; one-story public garage, 200x200; $100,000.

**Brooklyn, N. Y.;** S. H. G. Construction Co., Inc., 191 S. Ninth street; one-story garage, 50x100; $15,000.

**Governors Island, N. Y.;** United States Army, Col. Norton, Department Quartermaster; one-story garage, 42x132; $15,000.

**Long Island City, N. Y.;** Standard Oil Co.; one-story garage, 29x150; $10,000.

**New York, N. Y.;** Groneberg & Lenchtorg, 303 Fifth avenue; four-story public garage, 45x100.

**New York, N. Y.;** P. F. Herpershansen, 43 Thompkins street; two-story garage, 62x100; $15,000.

**New York, N. Y.;** John H. Beekmann, 2295 University avenue; one-story garage, 100x125; $36,000.

**New York, N. Y.;** Samuel Williams, care Louis A. Sheinart, 194 Bowery; four-story garage, 80x100; $35,000.

**New York, N. Y.;** Martin P. Lodge, 534 W. 44th street; 1½-story garage, 50x100; $10,000.

**New York, N. Y.;** August Oppenheimer, 170 Broadway; one-story garage; $80,000.

**New York, N. Y.;** Greenwich Association Corporation, 26 W. 31st street; one-story garage; $10,000.

**New York, N. Y.;** Commodore Biltmore Co., Inc., Madison avenue and 43rd street; garage, 150x200; $400,000.

**New York, N. Y.;** Trebout Avenue Co.; one-story garage, 25x135; $800.

**New York, N. Y.;** Rothbart Garage Operators, Inc.; one-story garage, 25x62; at corner South and Front streets.

**New York, N. Y.;** Statwart Realty Co.; one-story garage; $75,000.

**New York, N. Y.;** Dennison Realty Co.; one-story garage, 62x140; at 317-51 Front street.

**New York, N. Y.;** Dual Co.; four-story garage, 119x89; $100,000.

**New York, N. Y.;** G. Garazzo; one-story garage, 50x72; $7000.

**New York, N. Y.;** Bownell Motor Co.; one-story garage, 112x217x191; at 39-47 Sussex avenue.

**New York, N. Y.;** Klosk Construction Co.; one-story garage, 41x100, at 153-55 E. 119th street.

**New York, N. Y.;** Foster Improvement Co.; one-story garage, 105x55; $25,000.

**Syracuse, N. Y.;** Leo B. Kirchner, 1042 W. Belden avenue; one-story garage, 50x150; $12,000.

**Syracuse, N. Y.;** W. H. Bissell; one-story garage, 160x72; $18,000.

**Syracuse, N. Y.;** Jacob Dold Packing Co.; one-story garage at 259 Walton street; $15,000.

**Utica, N. Y.;** Overland-Utica Co., 326 Lafayette street; one-story service station, 55x65.

**Utica, N. Y.;** Williams & Williams; one-story garage, 35x42, at 214 Cooper street.

**Raleigh, N. C.;** Motor Service Co.; one-story garage, 80x150; $15,000.

**Hope, N. D.;** Fuller Land Co.; one-story garage, 50x140; $16,000.

**Jamestown, N. D.;** Jamestown Motor Co.; one-story garage and salesroom, 40x60.

**Valley City, N. D.;** Pegg Garage; one-story garage, 75x140.

**Cincinnati, O.;** Franklin Motor Car Co.; three-story garage; $40,000.

**Cincinnati, O.;** Seaton Realty Co.; one-story garage at 1024-26 Gilbert avenue; $30,000.

**Cleveland, O.;** K. P. Tire Repair and Garage, 5363 Broadway; public garage and repair shop; $60,000.

**Cleveland, O.;** O. Motors Realty Co.; one-story garage; $200,000.

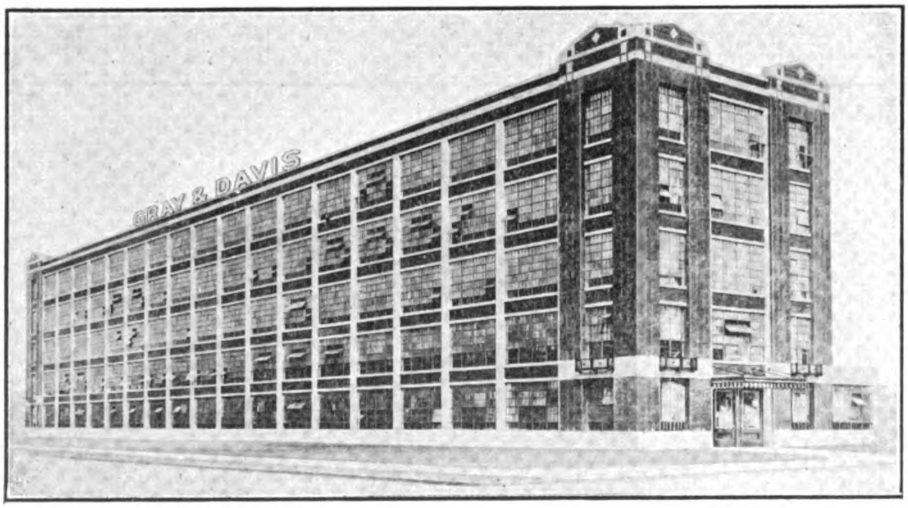
**Cleveland, O.;** Woodland-Fifty-Fifty Co.; one-story garage, 90x170; $22,000.

**Toledo, O.;** Standard Garage Co.; three-story garage, 80x120.

**Toledo, O.;** D. M. Kable; one-story garage, 80x120.

**Boise City, Okla.;** Thomas & Finch; one-story garage, 40x110.

**Geary, Okla.;** Geary Motor Co.; one-story garage, 50x100.



**Big Plant of Gray & Davis, Inc., Boston, Mass., Manufacturers of Lamps, Dynamos and Starting Motors for Automobiles.**

**Oklahoma City, Okla.;** Palace Garage, 111 W. Third street, 100x140.

**Tulsa, Okla.;** Hughes Motor Co.; one-story garage, 100x100.

**Tulsa, Okla.;** Seepitt Motor Sales Co.; one-story garage, 50x150.

**Waurika, Okla.;** Price Caroland; one-story garage, 50x100.

**Woodward, Okla.;** Williams & Drake; one-story garage, 50x150.

**Portland, Ore.;** Robert Motor Car Co.; one-story garage, 100x100; $15,000.

**Pineville, Ore.;** Inland Auto Co.; one-story garage, 51x140.

**Lancaster, Pa.;** W. E. Frain, 1239 Park avenue; two-story private garage, 25x40.

**Pittsburgh, Pa.;** Ward Baking Co.; one-story garage, 72x174; $90,000.

**Philadelphia, Pa.;** Taber & Osborn, 220 N. 15th street; two-story public garage, 47x150; $15,000.

**Philadelphia, Pa.;** G. D. Negro, 943 South Ninth street; two-story public garage, 33x75.

**Philadelphia, Pa.;** Charles Gurewitz; one-story public garage, 30x100; $5000.

**Scranton, Pa.;** Atlantic Refining Co., 3144 Passyunk avenue, Philadelphia; two-story sales and service station, 20x30.

**Warren, Pa.;** Overland-Warren Co.; one-story garage, 36x90.

**Providence, R. I.;** Page & Page, 87 Weybosset street; one-story public garage, 30x90; $10,000.

**Anderson, S. C.;** John E. Sedler; two-story brick automobile show room, 40x110.

**Greenville, S. C.;** L. O. Patterson; one-story garage, 55x100; $6700.

**Farmer, S. D.;** B. H. Lindekugel; one-story garage, 40x150.

**Coleman, Tex.;** Martin Reo Co.; one-story garage, 50x120.

**Ferris, Tex.;** Ferris Motor Co.; one-story garage, 100x125; $12,000.

**Roby, Tex.;** Roby Garage; one-story semi-fireproof concrete garage; $5000.

**Salt Lake City, Utah;** E. H. Anderson; one-story garage, 100x127.

**Norfolk, Va.;** Woodhouse Electric Co., 150 Bank street; one-story public garage, 70x200; $30,000.

**Roanoke, Va.;** Huff company, two-story brick garage; $60,000.

**Auburn, Wash.;** Fairchild Motor Co.; two-story garage, 60x100.

**Buckley, Wash.;** Orton Motor Co.; one-story garage, 60x80.

**Seattle, Wash.;** Overland Sales Co.; one-story garage and sales room at 1519-35 12th avenue, 113x180.

**Seattle, Wash.;** J. D. Lowman, three-story garage, 85x140; $45,000.

**Spokane, Wash.;** Flint Investment Co., Trent and Browne streets; one-story garage, 50x92; $7000.

**Ashippin, Wis.;** John Maasch; one-story garage, 50x100.

**Black Creek, Wis.;** M. Breitenbach; one-story sales and service station, 50x90; $5000.

**Green Bay, Wis.;** Northern Paper Mills, Madison and Bay streets; two-story service building, 84x74; $18,000.

**Menominee Falls, Wis.;** Schumann Motor Co.; one-story garage, 60x140; $20,000.

**Milwaukee, Wis.;** W. D. Herbst, 278 Lincoln avenue, 60x190; $60,000.

**Norwalk, Wis.;** McHugh & Co.; garage, 30x75.

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## Contracts Awarded.

**Fort Pierce, Fla.;** Felix C. Poppell; one-story brick garage, 50x100. Lessee, Russell Garage Co.

**Chicago, Ill.;** Myron H. Spades, 110 S. Dearborn street; one-story garage, 125x56; $6000.

**Chicago, Ill.;** W. A. Brunan, Liberty Motor Car Co., 2313 S. Michigan avenue; one-story garage, 108x150.

**Chicago, Ill.;** A. L. Howard, 19 S. La Salle street; one-story garage, 125x56; for Myron H. Spades, 110 S. Dearborn street; $6000.

**Greencastle, Ind.;** King & Morrison Ford auto agency; one-story salesroom and garage, 46x102.

**Vincennes, Ind.;** T. J. Edward, 16 W. Reed street; one-story auto filling station for Standard Oil Co.; $4000.

**Des Moines, Ia.;** A. H. Neuman Co., 519 Hubbell building; one-story garage, 100x120; for Consingy Motor Truck Co., 207 W. 10th street; $25,000.

**Independence, Kan.;** Brewster Brothers; one-story garage and sales room, 50x125; for Independence Motor Co.; $22,947.

**Manhattan, Kan.;** Long Oil Co.; one-story filling station, 50x30; $3000.

**Covington, Ky.;** Joseph Wilbers & Sons, 710 W. Seventh street; one-story private garage, 20x45; for Joseph Kolf, 807 Bakewell avenue; $1800.

**Monroe, La.;** Frank Mashing, two-story garage, 55x110; for Milner Motor Co., 103 N. Third street; concrete floor; $21,000.

**Baltimore, Md.;** Willare E. Harn, Inc., Calvert street; one-story private garage, 18x30; for Arthur W. Machen, Jr., 1109 Calvert building; $2000.

**Detroit, Mich.;** A. J. Smith Construction Co.; one-story assembly building, 140x96; for Denby Motor Truck Co.; $25,000.

**Rochester, Minn.;** G. Schwartz & Co., Stebbens building; one-story public garage and repair shop, 40x70; for C. E. Ellis, Sixth and Broadway; $10,000.

**St. Louis, Mo.;** H. Schulte, 4229 Sacramento avenue; one-story private garage, 26x30; for Miss N. Peters, 3503 Palm street; $3500.

**St. Louis, Mo.;** Garden City Building Co.; two-story garage for Centre Realty Co.; $18,000.

**St. Louis, Mo.;** T. J. Ward Construction Co., 1519 Olive street; automobile show room, office and garage, 109x125; for R. E. Burdeau Co., 2021 Locust street; $50,000.

**Omaha, Neb.;** Nebraska Service Station, 2203 Farnam street; one-story service station, 95x132; $20,000.

**Jersey City, N. J.;** C. Heidt & Son, 64 Fairmount avenue; one-story garage, 50x100; $10,000.

**Newark, N. J.;** Leonard Lorentowicz; one-story garage at 390-92 Halsey street; $9000.

**Newark, N. J.;** Meyer Gendel; one-story concrete garage at 537 S. 10th street; $1500.

**Cleveland, O.;** Craig, Curtles Co., 1931 Guardian building; one-story garage, 76x96; for W. Bingham Co., 1278 W. Ninth street; $5000.

**Youngstown, O.;** Banner Electric Co., 646 Market street; one-story garage, 24x30; $2000.

**Bethlehem, Pa.;** George Nerdinger, Wilbur Trust building; one-story private garage, 25x25; for Miss Iva Krause; $3000.

**Philadelphia, Pa.;** Samuel Paul; one-story stone garage, 24x30, at 8223-25 Germantown avenue; for Paulo D. Puglia; $750.

**Philadelphia, Pa.;** Philip Rolin; five one-story brick garages, each 12x20, at 1501-3-5-11-13 Widener place; for J. Cofman; $1500.

**Philadelphia, Pa.;** H. E. Sweger; one-story brick garage, 40x112, at 3651-53 N. Camac street; for Caroline Webber; $5000.

**Philadelphia, Pa.;** Robert McAllister; one-story brick garage, 15x32; at 5408 Baltimore avenue; $500.

**Philadelphia, Pa.;** Warren E. Biscoe; one-story garage, 79.6x16, southwest corner Brooklyn and Aspen streets; for E. S. Kramer; $2500.

**Philadelphia, Pa.;** E. E. Hollenback, Inc.; one-story brick garage, 20x80, at 155 N. 23rd street; for Michall Donnelly; $1800.

**Philadelphia, Pa.;** Barnes Brothers; one and two-story stone garage, 74x52; west side Collins street, north Westmoreland street; for Ambrose Letter; $7800.

**Philadelphia, Pa.;** Philip Rohn; one-story brick garage, 12x20, at 1510-12 Widner place and one-story brick garage, 12x20, at 1511-13 Nedro avenue, for Ida Cofman; $600.

**Philadelphia, Pa.;** Milton W. Young; one-story stone garage, 23x36, at 5917 Drexel road; for F. A. Rakestraw; $2500.

**Philadelphia, Pa.;** John N. Gill & Co., one-story brick garage, 74x72; southwest corner 49th street and Baltimore avenue; for George W. Smith & Co.; $12,000.

**Philadelphia, Pa.;** A. DeMarco; one-story brick garage, 17x28, at 1807 South Carlisle street; for Dr. O. Monticelli; $950.

**Philadelphia, Pa.;** Christian Dear Sons; one-story garage, south side Rockland street; east of Third; $500.

# NEW BUSINESS CONCERNS AND CHANGES OF NAMES.

## The Month's Record of Transfer of Ownerships and Opening of Garages, Agencies, Branches, Service Stations and Repair Shops.

### RECENT TRANSFERS OF BUSINESS OWNERSHIPS.

**Oakland, Cal.;** The Steam Vulcanizing Works, 4191 Broadway, is now owned by H. A. Adams.

**Colorado Springs, Col.;** The Hammond-Babber Motor Co. has succeeded the Hammond-Sellers Motor Co.

**Pleasant Plains, Ill.;** J. C. Weatherford and E. D. Boynton have formed a partnership and will handle tractors.

**College Springs, Ia.;** J. E. Gibson has bought out the interest of his partner in the garage firm of Gibson & Dugan

**Council Bluffs, Ia.;** J. Eaden has bought the repair shop of Sidney Reade.

**Des Moines, Ia.;** The Manbeck Motor Sales Co. has taken over the business of the Newby Motor Co. Earl Manbeck will head the new concern.

**Greenfield, Ia.;** J. W. Hall has bought the West Side Garage.

**Harris, Ia.;** R. O. Smith has sold his garage.

**Malvern, Ia.;** Fred Rodewald has leased the Anderson Garage.

**Perry, Ia.;** W. R. Bennett has sold his motor car business and building to L. W. Maytag.

**Bellaire, Kan.;** A. P. Shepardson has sold his garage to Roy Collier.

**Hardtner, Kan.;** E. L. Porter has bought the garage of the Thompson Auto Co.

**Parsons, Kan.;** Fred Stocker is now part owner of the O. H. Bond Motor Co.

**Rossville, Kan.;** James & Somers have bought the Shank Garage.

**Detroit, Mich.;** The Majestic Motor Sales Co., 734 Woodward avenue, has been formed by E. E. Turner and W. J. Senecal.

**Castle Rock, Minn.;** Ezra Olinger has bought the interest of E. Glad in the Castle Rock Garage.

**Eagle Lake, Minn.;** H. P. Jorenson has bought his partner's interest in the Eagle Lake Garage.

**Minneapolis, Minn.;** The Independent Garage, 318 Houston street, has been purchased by Byran T. Blake and Lou Bardwell. It was formerly owned by F. C. Maas.

**Wheaton, Minn.;** Thomas McCrimmon has bought the vulcanizing business of Robert Neuman.

**Desloge, Mo.;** Walter H. Bouchard has purchased the service business of Moore & Habbits.

**Spearville, Mo.;** The Bartz Motor Co. has succeeded Bartz & Johnson.

**Dewitt, Neb.;** Ed and Will Brier have taken over the repair shop of Claude Wheeler's Garage.

**Fairbury, Neb.;** Harry Vaughn has bought M. Beaver's interest in the Beaver Garage.

**Lodge Pole, Neb.;** Frank Engler has bought the garage of C. Moorhead.

**Nebraska City, Neb.;** E. J. Von Gilern has bought an interest in the E. L. Pratt Auto Co.

**Norfolk, Neb.;** Harold H. McCulla has taken over the Overland-Nebraska Co.

**Ord, Neb.;** C. Burdick and Cley Hughes have formed a partnership and will conduct a supply business.

**Edgeley, N. D.;** Herman Goehl has purchased a third interest in the Ernest Bros. Garage.

**Forestburg, N. D.;** Jess Weeks has bought the Walker City Garage.

**Gilby, N. D.;** J. Sanfacon has bought the interest of Lynn Jones in the Haddow & Jones Garage.

**Grand Forks, N. D.;** Reade Auto Co. has been sold to H. J. Marberg.

**Hazelton, N. D.;** Williamsport Motor Co. has taken over the Glines Motor Co.

**Williston, N. D.;** O. E. Kron of the Williston Overland Co. has bought the Williston Auto Tire Repair Co. from S. Hansen.

**Belvidere, O.;** The Mitchell agency has been taken over by the Collier Co., which will handle Mitchell cars in Winnebago, Boone and part of McHenry and Ogle counties.

**Bradley, Okla.;** Thos. Savage has bought James Burrows' interest in the Bradley Garage.

**Davenport, Okla.;** Funnell & Adams have bought the garage which was operated and owned by Terry & Meredith.

**Kiowa, Okla.;** Henry Fondren and Roy Gardner have purchased the Palace Garage from D. D. Tucker and A. A. Tipps.

**Snyder, Okla.;** Gay McGlaun and Fred Parsons have bought the garage formerly owned by W. C. Fullilove.

**Tulsa, Okla.;** Spalding and Swinney have taken over the retail business of the Purdy Motor Co.

**Bellingham, Ore.;** J. A. P. Henderson has sold his interest in the Highway Garage.

**Portland, Ore.;** The Sharp Motor Car Co. has purchased the Chandler agency from the Twin States Automobile Co.

**Artesian, S. D.;** A. J. Ross has bought the garage of Dana J. Jones.

**Blooming, S. D.;** A. E. Bandy has sold his garage to George Brown, Volga, S. D.

**Clear Lake, S. D.;** G. G. St. John has bought an interest in the business of Clark & Schiefelbein.

**Howard, S. D.;** Frank Feiller has bought the business of Evernes Bros.

**Lead, S. D.;** Bart Klingler has bought the stock of Ralph Eldridge in the Black Hills Overland Co.

**Selby, S. D.;** Walter Goodwin has leased the Yellowstone Garage to William Drewer, Montridge, S. D.

**Spearfish, S. D.;** Chester Murray has bought the Queen City Garage.

**Rapid City, S. D.;** B. F. Keith of Norris-Keith Co., 730 Main street, has purchased the Norris interest and will run the establishment himself.

**Wakonda, S. D.;** Magnus Gudmanson has bought the Wakonda Garage from Ketchum Bros.

**Wildrose, S. D.;** Theodore Thompson has bought the interest of Mike Thorson, his partner.

**Haskell, Tex.;** H. Hutchison has purchased the Haskell Rubber Co. from W. H. Starr.

**Waco, Tex.;** Claude D. Adams and Walter D. Rosch now own an interest in the Overland Sales Co.

**Seattle, Wash.;** Alfred G. Ayerst has bought the Ford agency from Harry Rothweiler.

**Murray, Utah;** The repair department of the Nash Auto Repair Co. has been taken over by the Roselund Auto and Machine Co.

### NEW BUSINESS LOCATIONS, REMOVALS AND IMPROVEMENTS.

**Oakland, Cal.;** The W. E. Strei Co. has moved its accessory store to 2305 Broadway.

**Richmond, Cal.;** Kelly's Tire Shop is being conducted in a sales room on MacDonald avenue.

**Grinnell, Ia.;** J. W. Norris is building an addition to his storage garage. It will be 80 by 148 feet, with cement floors, and is an extension to his building at the corner of State street and Fourth avenue.

**Perry, Ia.;** The Kirgis Auto Co. has moved into new quarters.

**Belpre, Kan.;** J. E. Hardy and Lee Miller have secured larger quarters.

**Newton, Kan.;** O. Bachand has moved his garage from West Sixth street to West Broadway.

**Detroit, Mich.;** Thomas J. Doyle has moved his exchanged car department from Woodward avenue to the Palace Roller Rink at Forest avenue.

**Saginaw, Mich.;** The Saginaw Crow-Elkhart Co. has moved into sales rooms at Warren and Lapeer avenues. C. C. Hyzer, H. H. Fleischmann and Frank Adrian are the members of the new company.

**Centre City, Minn.;** C. S. Holmberg has sold his automobile repair shop to Walter Holmberg.

**Great Falls, Mont.;** The McKinney-Winders Motor Co., formerly located at Fargo, N. D., has moved to 12-23 Fifth street, south. The company has taken the agency for the Ford car.

**Troy, N. Y.;** Edgar H. Brunelle has moved into larger quarters at 78 Fourth street. A full line of accessories will be carried and has the accommodations for storage of 100 motorcycles.

**Toledo, O.;** The Standard Garage Co. has moved into their building at 316 Erie street.

**Clinton, Okla.;** The Halifax Garage Co. will move into a new building.

**Tulsa, Okla.;** The Auto Repair and Ignition Co. has moved to 113 South Cheyenne avenue.

**Tulsa, Okla.;** The Osage Motors Corporation has moved from Seventh and Main streets to 12th and Boston streets.

**Lancaster, S. C.;** The Cawtawba Automobile Co. has moved its garage to new buildings. This will add greatly to the floor space.

**Memphis, Tenn.;** The H. W. Johns-Manville Co. has moved to new quarters at Madson avenue and Second street.

**Houston, Tex.;** G. M. C. Truck Sales will open quarters at 1915 San Jacinto street.

**Kaysville, Utah;** E. Peterson has moved into new quarters.

**Salt Lake City, Utah;** The Taylor Motor Co. has moved to 127 South State street.

**Salt Lake City, Utah;** Salt Lake Auto Accessories has discontinued the retail business and the wholesale business will be carried on in new quarters in the Dooley building.

**Salt Lake City, Utah;** The Granite Auto Repair Co. has moved into its quarters at 3242 South State street and will do repair work.

**Salt Lake City, Utah;** The Wilson Auto Repair Co. has moved to its new quarters in the new building at 134 West Broadway.

**Seattle, Wash.;** The Wire Wheel Service Co. has moved into quarters at 309 East Pine street.

**Spokane, Wash.;** The Spokane Auto Co. has moved into its new home at 816 Second avenue.

**Walla Walla, Wash.;** J. W. Rogers Motor Car Co. has opened new quarters in the Ford Garage.

**Sheboygan, Wis.;** The Raab-Thieman Co. has moved to its new garage and service building at Eighth street and Niagara avenue.

### FACTORIES, GARAGES AND REPAIR SHOPS.

**Redding, Cal.;** M. D. Rathbun has opened a repair shop on California street.

**San Francisco, Cal.;** W. H. Winn has started a Cole repair shop on Fulton street.

**Lyons, Kan.;** Mark Cain has opened a repair shop.

**Winchester, Ky.;** John C. Swope will open up a garage and repair shop in the building occupied by Martin & Hodgkin for Dodge Bros. cars.

**Monroe, La.;** The Blackman Auto Co.

will erect a modern brick garage and automobile sales establishment on the corner of Washington and Walnut streets. It will be a one-story building, 60x152 feet. The company handles Briscoe, Kissel and Oldsmobile cars and Kissel trucks.

**New Orleans, La.;** The Motor Inn Garage is building a new home on Carondelet street. It will be 100x20 feet and have four entrances. The firm will carry a complete line of accessories and will be agent for the Roamer cars.

**Plainview, Neb.;** C. F. Schaupper has opened a repair shop.

**Scottsbluff, Neb.;** C. Jackson has opened a repair shop.

**Charlotte, N. C.;** N. J. Sherrill will erect a $15,000 garage.

**Battle Creek, Mich.;** M. E. Mahoney and H. E. Babcock have opened an up-to-date garage and oiling station at 340 West Main street. New and second hand tires will be carried, as well as gasoline, kerosene, Mobiloil and bulk oil. The new firm will be known as the Michigan Oil and Tire Shop.

**Calumet, Mich.;** The People's Garage has opened on Oak street by Vlas Maselnick. It is prepared to do general repair work.

**Central Lake, Mich.;** J. H. Smith & Son will build a brick garage on the lot on which the old Taven Hotel stood. It will have a 75 foot front.

**New York, N. Y.;** R. Rankovitch will erect a $5000 garage at 249 East 71st street.

**New York, N. Y.;** Shampan & Shampan has plans filed for a 200 by 100 foot garage to be built on North First street and Driggs avenue.

**New York, N. Y.;** The Xint Garage Co., at 16-18 West 115th street, will build a three-story garage to cost $28,500.

**Cleveland, O.;** The Lubric Co. has leased a new garage at 3515 Lakeside avenue, N. E.

**Cavour, S. D.;** Otto Lather has opened a repair shop.

**Volga, S. D.;** L. W. Lieb has opened a used car sales room.

**Sioux City, S. D.;** Fred J. Watson is erecting a garage on Webber avenue and Sixth street.

**Salt Lake City, Utah;** H. Ray Johnson has opened a new repair shop located at 112 East 33rd street.

**Seattle, Wash.;** Charles S. Harper, Inc., has opened a new service station and Willard storage battery agency.

**Tacoma, Wash.;** Young & Wycoff have opened a repair shop for Ford cars.

**Framington, Utah;** C. M. Udy is opening a new garage.

**Baraboo, Wis.;** Dougherty Bros. will operate a garage.

**Greenbush, Wis.;** Fred Gilmon and Ernest Mayhes have opened a garage.

**Plainfield, Wis.;** J. J. Eastling has established a tire and repair shpo on North street.

### AGENCIES, DEALERS AND SERVICE STATIONS.

**Eureka, Cal.;** H. A. Hine has taken over the local agency of the Velie car and has established it in his new garage, which was recently completed.

**Fresno, Cal.;** The Power Rubber Co. has opened a branch office. It is located at 1213 Locust street.

**Oakland, Cal.;** Arbuthnot's Tire Shop is now conducting a vulcanizing plant at 168 12th street.

**Oakland, Cal.;** W. W. Robinson Motor Co. has leased the adjoining building as a used car sales room.

**Oakland, Cal.;** The Tolliver Tube and Tire Co. has opened sales rooms at 2551 Broadway.

**Sacramento, Cal.;** The Paige Motor Car Co. has secured the Sacramento territory as sub-agent for the Daniels car.

**San Francisco, Cal.;** The McNaul Tire Co. of California has opened new sales rooms. They are located at 500 Van Ness avenue.

**Santa Monica, Cal.;** The Auto Electric Co., 315 Utah avenue, has been added to the list of new Willard battery service stations.

**Loveland, Col.;** I. Rae Cowdin has opened a branch service station.

**New Haven, Conn.;** The Packard Motor Car Co. has opened a New Haven county branch at 254 Crown street. H. F. Flowers, formerly Hartford manager of the truck department, has been made manager.

**Savannah, Ga.;** The Savannah Motor Sales Co. has opened sales rooms on Bay street for the Elcar.

**Des Moines, Ia.;** The Goodyear Tire and Rubber Co. has opened a new service station at 1010 Locust street.

**Augusta, Kan.;** The Varnum Tire Service has opened with F. T. Colgan as manager.

**Baxter Springs, Kan.;** Cobine Bros. have opened a supply store.

**Ellsworth, Kan.;** The Arnold Motor Co. has opened sales rooms in the Ross building.

**Hiawatha, Kan.;** Fred Campper has opened a sales room.

**Holton, Kan.;** Finley Thompson has opened a storage battery station in the Sutherland Hotel.

**Lowell, Mass.;** The Wamosit Garage Co., Watson and Whipple streets, has secured the agency for the Chevrolet car.

**Grand Rapids, Mich.;** The Akron Tire Co. has opened its new building at Crescent street and Bond avenue.

**Detroit, Mich.;** The Curtiss-Detroit Sales Co. has opened for business. It is a branch of the company at Muskegon, Mich.

**Menominee, Mich.;** J. H. Vernet has opened display rooms and a service station in the Wistrand block, Grand avenue, for the National, Oakland and Nash cars.

**Saginaw, Mich.;** The Sutton Sales Co., Reo and Hudson distributors, has opened a new service station at 209 South Second street.

**Norton, Minn.;** The Norton Battery Co. has added the Willard storage battery to its line. It is located on West Main street.

**Waconia, Minn.;** Herbert Kemski has opened a vulcanizing plant.

**Webb City, Mo.;** A. R. Harmon and Charles Hershfield have started a new vulcanizing shop. It will be called the Webb City Vulcanizing and Supply Shop.

**Asheville, N. C.;** The Asheville Auto Sales and Implement Co. has opened for business with C. W. Byrd as president; J. F. Keith, secretary and treasurer, and J. L. Page, manager.

**Clayton, N. C.;** Durham, Brown & Cunningham has leased a new building and will expand their automobile business. They will handle Studebaker, Oldsmobile and Dodge Bros. cars.

**Jamestown, N. D.;** Ed. Abderson has opened a supply store.

**Mobridge, N. D.;** Love & Johnson have opened a vulcanizing plant.

**Monango, N. D.;** A. A. Suszycki has opened a vulcanizing plant.

**Volga, S. D.;** L. W. Lieb has opened a used car sales room.

**Edmond, Okla.;** The McGowans Hardware Co. has been appointed Overland dealer.

**Stillwater, Okla;** The Shideler Motor Sales Co. has opened for business and Grover Shideler is manager.

**Spokane, Wash.;** R. L. Bigartus, 313 Sprague avenue, has opened his new building with a new and exchanged car show.

**Tacoma, Wash.;** The H. W. Johns-Manville Co. has opened a branch office at 1015 A street.

**Salt Lake City, Utah;** The Edwards and Warden Motor Parts Co., Inc., is running a battery and ignition service station at 131 East Broadway.

**Salt Lake City, Utah;** Joseph Douglas has opened a vulcanizing shop at Sugar station.

**Washburn, Wis.;** Trowbridge & Fox will handle the Buick in their new sales rooms.

# TRADE INFORMATION EXCHANGE

## A National Clearing House of the Trade's Needs for Manufacturers, Jobbers and Agents

### GASOLINE PASSENGER CARS.

**Harrisburg, Pa.;** M. Prennor & Sons, 623 Herr street, is anxious to secure moderate prices on gasoline passenger cars.

**Blackwell, Okla.;** J. H. Amos is in the market for gasoline passenger cars; selling price, $800 to $1200.

**Angleton, Tex.;** Roy Lynn, Bartell building, would like to secure the agency for gasoline passenger cars; selling under $1000.

### GASOLINE COMMERCIAL CARS.

**Harrisburg, Pa.;** M. Prennor & Sons, 623 Herr street, is in the market for gasoline cars selling at moderate prices.

### SPECIAL OPPORTUNITY.

**Troy, N. Y.;** Edgar H. Brunelle, 78 Fourth street, would like to secure catalogues from motorcycle houses and also sporting goods.

**Harrisburg, Pa.;** M. Prennor & Sons, 623 Herr street, would consider the agency for passenger cars and trucks in the territory of Harrisburg, Pa. Would also like to receive catalogues from automobile accessory houses.

### ACCESSORIES, EQUIPMENT AND SUPPLIES.

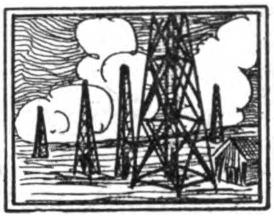
**Chico, Cal.;** J. H. Vaughan Co., Seventh street and Broadway, is in the market for air compressors, batteries, bearings, brushes, bulbs, chains, charging apparatus, coils, commutators, drills, headlights, horns, hydrometers, ignition, lamps, magnetos, platinum, separators, starters, storage systems, switchboards, tape, tire accessories, tires, vulcanizers, wrenches.

**Washington, D. C.;** Neumeyer Motor Co., 211-13 B street, would like to secure autogenous welding equipment, bumpers, dimmers, polishes, ratchet drills, recording time clocks, rheostats, soaps, waste.

**Blackwell, Okla.;** J. H. Amos is anxious to secure air compressors, chains, charging apparatus, cylinder machines, drills, fire extinguishers, hose, goggles, greases, lubricators, patches, pumps, recording time clocks, removers (carbon), shock absorbers, soaps, storage systems, tanks, tire accessories, tires, tools, vulcanizers, wrenches.

Receipts of the Motor Vehicle Department of New Jersey in March amounted to $234,759.47, which was an increase over the same month of 1917 of $128,783.38 according to an announcement made by Commissioner William L. Dill of Paterson. A check for the amount was turned over to William T. Read, state treasurer. Commissioner Dill also stated that the receipts for the first three days of the present month amounted to more than the corresponding period last year, and that in Newark on Tuesday the total number of motor examinations was 311 and in Camden 272, thus showing an increased demand for the use of the automobile.

# Securities and General Materials Markets



## Automobile Securities Quotations

| | March 7 | | April 11 | |
|---|---|---|---|---|
| | Bid | Asked | Bid | Asked |
| Ajax Rubber Co | 53 | 55 | 53 | 55 |
| J. I. Case T. M. Co., pfd | 82 | 86 | 83 | 86 |
| Chalmers Motor Co., com | 5 | 8 | 6 | 8 |
| Chalmers Motor Co., pfd | 30 | 40 | 30 | 40 |
| Chandler Motor Co | 85 | 89 | 82 | 85 |
| Chevrolet Motor Co | 118 | 120 | 119 | 120 |
| Fisher Body Corp., com | 26 | 33 | 33 | 35 |
| Fisher Body Corp., pfd | 80 | 87 | 76 | 83½ |
| Fisk Rubber Co., com | 50 | 53 | 50 | 53 |
| Fisk Rubber Co., 1st pfd | 98 | 103 | 98 | 103 |
| Fisk Rubber Co., 2nd pfd | 70 | 75 | 70 | 75 |
| Firestone Tire & Rubber Co., com | 96 | 98 | 92 | 95 |
| Firestone Tire & Ruber Co., pfd | 98 | 100 | 96 | 98 |
| General Motors Co., com | 116 | 118 | 118 | 121 |
| General Motors Co., pfd | 83 | 85 | 80½ | 82 |
| B. F. Goodrich Co., com | 43 | 45½ | 43 | 45 |
| B. F. Goodrich Co., pfd | 94 | 100 | 99½ | 100½ |
| Goodyear Tire & Rubber Co., com | 136 | 129 | 136 | 139 |
| Goodyear Tire & Rubber Co., pfd | 99 | 100 | 97 | 99 |
| Grant Motor Car Corp | 2 | 3 | 3 | 4 |
| Hupp Motor Car Corp., com | 3 | 3¼ | 3 | 3½ |
| Hupp Motor Car Corp., pfd | 78 | 83 | 84 | 88 |
| International Motor Co., com | 16 | 19 | 22 | 26 |
| International Motor Co., 1st pfd | 40 | 45 | 52 | 58 |
| International Motor Co.. 2nd pfd | 16 | 20 | 23 | 28 |
| Kelly-Springfield Tire Co., com | 46 | 47 | 41 | 43 |
| Kelly-Springfield Tire Co., 1st pfd | 77 | 85 | 75 | 85 |
| Lee Rubber & Tire Corp | 15 | 16 | 12¼ | 13½ |
| Maxwell Motor Co., Inc., com | 28 | 29 | 25½ | 27 |
| Maxwell Motor Co., Inc., 1st pfd | 60 | 63 | 53 | 54 |
| Maxwell Motor Co., Inc., 2nd pfd | 22 | 24 | 19½ | 22 |
| Miller Rubber Co., com | 133 | 127 | 108 | 112 |
| Miller Rubber Co., pfd | 95 | 98 | 96 | 98 |
| Packard Motor Car Co., com | 93 | 98 | 92 | 97 |
| Packard Motor Car Co., pfd | 92 | 95 | 89 | 92 |
| Paige-Detroit Motor Car Co | 19 | 21 | 17 | 18 |
| Peerless Truck Car Corp | 17 | 18½ | 14 | 16 |
| Portage Rubber Co., com | 111 | 113 | 104 | 107 |
| Regal Motor Car Co., pfd | .. | .. | .. | .. |
| Reo Motor Car Co | 17 | 19 | 16 | 17 |
| Saxon Motor Car Corp | 9½ | 10½ | 6 | 9 |
| Standard Motor Construction Co | 12 | 13 | 12½ | 13 |
| Standard Parts Co | 65½ | 69½ | 54 | 56 |
| Stewart Corp., com | 54½ | 56½ | 40½ | 41½ |
| Studebaker Corp., pfd | 47½ | 48½ | 80 | 90 |
| Stewart Tire & Rubber Co | 93 | 96 | .. | .. |
| Swinehart Tire & Rubber Co | .. | 35 | 25 | 40 |
| United Motors Corp | 54 | 56½ | 25¾ | 26 |
| U. S. Rubber Co., com | 46½ | 58½ | 54¼ | 56 |
| U. S. Rubber Co., pfd | 98 | 103 | 103 | 105 |
| White Motor Co | 42½ | 43½ | 42 | 43 |
| Willys-Overland Co., com | 18 | 19 | 17½ | 18½ |
| Willys-Overland Co., pfd | 80 | 82 | 79 | 81 |

## General Market Prices

| | March 15 | April 13 |
|---|---|---|
| Iron, foundry, 1 X ton | 34.00 | 34.00 |
| Iron, foundry, 2 X ton | 33.50 | 33.50 |
| Iron, Bessemer, ton | 36.30 | 35.20 |
| Steel, Bessemer, ton | 47.00 | 47.00 |
| Copper, 100 lbs., electric | 23½ | 23½ |
| Lead, 100 lbs | 7¼ | 7 |
| Petroleum, Kan., cr., bbl | 2.00 | 2.25 |
| Petroleum, Pa., cr., bbl | 4.00 | 4.00 |
| Linseed oil, raw | 1.50 | 1.50 |
| Lard oil, prime | 2.25 | 2.35 |
| Fish oil, Menhaden, br | 97 | 1.05 |
| Sulphuric acid, 60 | .... | .... |
| Cottonseed oil, bbl | 20.00 | .... |
| Silk, raw, Japan | 6.25 | 6.65 |
| Rubber, fine, up-river, Para | 57½ | 61 |
| Tire, scrap | 4⅜ | 4⅜ |
| Steel, open hearth, ton | 44.50 | 44.50 |

### DOMESTIC CRUDE OIL PRICES.

The prices of crude petroleum at the wells during the middle of the month of April, were:

| | | | |
|---|---|---|---|
| **Pennsylvania dark** | $4.00 | Caddo, La., 38° | $2.25 |
| **Mercer black** | 2.28 | Caddo, La., heavy | 1.25 |
| **Cabell** | 2.77 | Healdton | 1.45 |
| **New Castle** | 2.10 | Moran | 2.25 |
| **Corning** | 2.85 | De Soto | 2.15 |
| Wooster | 2.68 | **Strawn** | 2.00 |
| North Lima | 2.38 | Thrall | 2.25 |
| South Lima | 2.38 | Crichton | 1.40 |
| Indiana | 2.28 | **Canada** | 2.45 |
| Princeton | 2.42 | Humble | 1.35 |
| **Somerset 32°** | 2.60 | **Cal., 27 grav** | 1.32 |
| **Ragland** | 1.25 | Goose Creek | 1.35 |
| Illinois above 30° | 2.42 | Jennings | 1.35 |
| Kan. & Okla | 2.25 | Markham | 1.35 |
| Plymouth | 2.33 | Sour Lake | 1.35 |
| Corsicana light | 2.25 | Vinton | 1.35 |
| Corsicana heavy | 1.30 | Grass Creek | 1.70 |
| Electra | 2.25 | Elk Basin | 1.80 |
| Henrietta | 2.25 | Big Muddy | 1.50 |

**Naphtha.**

| | 10-gal. drums | |
|---|---|---|
| | Under 100 cases | 100 cases and over |
| Benzine, 59-62° | 45½ | 45 |
| Stove | 45¾ | 45¼ |
| Auto, 68-72° | 51¼ | 50¾ |
| Naphtha, 73-76° | 55¼ | 54¾ |

| | In cans and cases | | |
|---|---|---|---|
| | Under 100 | 100-199 | 200-299 |
| Naphtha | .... | .... | .... |
| Benzine, 59-62° | 33.46 | 33.15 | 32.96 |
| 73 a 76° | 42.55 | 42.45 | 42.35 |
| Stove | 33.65 | 33.40 | 33.15 |
| Auto, 68-72° | 38.55 | 38.45 | 38.35 |

### NEW YORK CITY PRICES.

New York City prices for petroleum and its products were:

**Petroleum.**

| | | | |
|---|---|---|---|
| Crude, barrels, a gallon | 17 | Fuel, 31° | 15 |
| Refined, barrels | 13 | Fuel, 34° | 15½ |
| Tank wagons delivery | 11 | | |

**Naphtha.**

| | | | |
|---|---|---|---|
| Garages | 24 | V. M. & P. deod., in steel | 26 |
| Consumers | 26 | V. M. & P. deod., in wood | 28 |

**Gasoline.**

| | | | |
|---|---|---|---|
| Gas machine, steel | 41 | 68-72° steel | 30 |
| 72-76° | 32 | 68-72° wood | 36 |
| 72-76° wood | 39 | | |

## Foreign Trade Opportunities

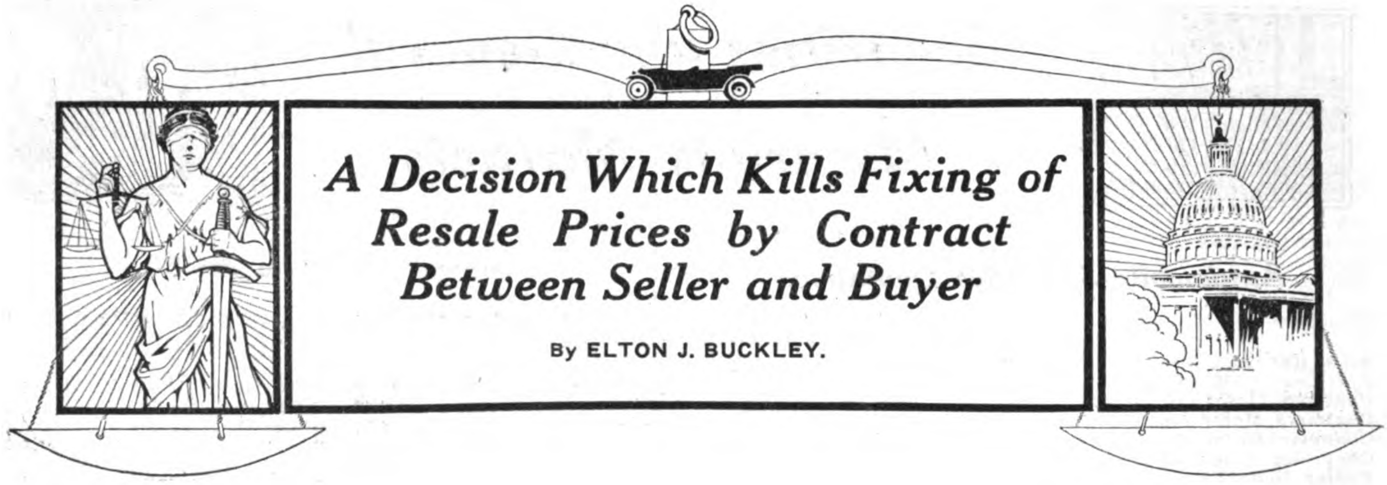
(Address Bureau of Foreign and Domestic Commerce, Washington, D. C., Giving Number, Which Will Forward Correspondence, Unless Otherwise Stated.)

26,691. A man in Canada desires to purchase and secure an agency for the sale of cylinder and automobile oils of the best grade. Quotation may be made f. o. b. Boston. Correspondence may be in English. Reference.

26,696. The London branch of a firm in France wishes to purchase motor engines for aeroplanes of various dimensions and strengths. It is also willing to accept an agency for the sale of same. References.

26,706. An automobile association in the British West Indies desires to purchase for its members tires and tubes, and wishes to select a suitable make of tire and tube from some manufacturer in the United States not already represented in that district. Payment will be made in New York through agents of the association.

26,717. A firm in France desires to be placed in communication with American manufacturers and exporters of furniture, wheels for automobiles, toys, glass and porcelain goods, bottles for perfume and drugs, optical goods, electrical apparatus, upholstering, paper, chemical products, glue and gelatin. References.



# A Decision Which Kills Fixing of Resale Prices by Contract Between Seller and Buyer

By ELTON J. BUCKLEY.

Having in mind a decision handed down by the United States Supreme Court a few days ago (American Graphophone Co. vs. Boston Store of Chicago), I am warranted in asserting that the plan by a manufacturer or other seller of merchandise of forcing his buyer to hold to a certain resale price, this being done to prevent cutting and to stabilize the market, is, in this country, dead. Under the decision I refer to any such scheme as that, whether done under cover of a patent or in connection with ordinary merchandise, is dead before it is born.

In the case I name, the American Graphophone Co. is a manufacturer of talking machines and records. It had the same iron-clad selling scheme which the Victor Co. and many other concerns had, viz., one reciting that a sale of machines and records was made upon the sole condition that the buyer should resell at certain prices only, and that if he didn't the seller should have the right to step in and take away all the goods he had on hand. There was also a provision about being responsible for damages. The contract contained a lot of legal strings which were supposed to compel the buyer to sell at the one price, or suffer the seller to do all sorts of harsh things to him.

The Boston Store of Chicago, a department store, bought some goods from the concern named, under this kind of a contract. As soon as it got the goods it cut the price of records and advertised the cut. The graphophone company brought suit for injunction, claiming that the cut was a violation of the contract, and that the cutting of the price caused it irreparable damage. The United States Court that heard the case refused the injunction, and the graphophone company, with its whole selling scheme at stake, appealed to the United States Supreme Court. This court a few days ago handed down a decision to the effect that contracts seeking to empower a seller to dictate the resale price of the article sold are not legal, and the court will not enjoin their violation, even though the buyer got his goods upon the express condition that he would not cut the price; also without regard to the injury which the cutting may do the seller's business.

**If you are in need of legal advice, if you want first-class professional service at no cost to yourself, address a letter to Mr. Buckley, in care of the Legal Department of the Accessory and Garage Journal, detailing the issues as clearly as possible. By special arrangement with this journal he will give immediate answer, either on this page for the benefit of other subscribers who may have the same trouble, or direct by mail as the inquirer specifies. Sign full name for the purpose of correspondence, not for publication. This service is free to subscribers to this magazine.**

The United States Supreme Court, in this decision, which is too lengthy to reproduce here, says that it is already on record in decisions that a seller of merchandise cannot interfere with the resale price of goods which he has sold outright; that contracts to this effect are void because in restraint of competition; that this is so both of patented and unpatented merchandise, and that all the law laid down in these other decisions on these points applies to the graphophone case. It takes up some little arguments that the graphophone company had put up to show that the law of the other cases didn't apply to this case, and pricks them as if they were soap bubbles. In fact, it leaves the whole scheme of price fixing by contract between seller and buyer, as dead as a door nail. It can never legally be attempted again unless there is some new legislation. This legislation the American Fair Trade League has been for two or three years endeavoring to get through Congress, but without success or the apparent chance of success.

Under this decision the seller of an article who wants to keep the cutter from slaughtering it, has only two ways left in which he can do it:

First.—He can refuse to sell the cutter himself, but under certain United States Court decisions (not the Supreme Court) he cannot compel his other buyers to refuse to sell him. If a cutter whom he has refused to sell gets goods from somebody else and cuts them, the manufacturer is helpless.

Second—He can stop selling altogether and appoint his former buyers as his agents to distribute goods for him on a commission. Such a distribution plan can be easily worked out; of course it is more troublesome than the sale plan. But it gives the original seller absolute control over terms and prices until his goods reach the consumer, which no other plan now possible under present law in this country can do.

The cutter, under recent decisions, can come pretty close to doing as he pleases with goods he has bought.

(Copyright, March, 1918, by Elton J. Buckley.)

## WILL ISSUE TRADE ACCEPTANCE MAGAZINE.

The National Trade Acceptance Bureau, Inc., has announced the publication of a monthly magazine devoted to the trade acceptance. It will contain, each month, authoritative articles by government officials, leading exponents of trade acceptance, experience of users and methods used to introduce it among their trade, legal opinions, new rulings for the Federal Reserve Board, and a complete department of "Questions and Answers" for the benefit of subscribers. Special departments will be devoted to the acceptance as applied to foreign trade, both export and import.

The office of publication will be at 84 Nassau street, New York, and the subscription price has been fixed at $3 per year. The first issue will appear during the month of May.

## PRESTON PASSENGER CAR WILL BE MADE IN SOUTH.

The Preston Motor Car Co., Birmingham, Ala., a newly organized concern, will manufacture a light passenger car and a truck of 1500 pounds capacity. Parts for the first car are being manufactured by the Sandusky Forging Co., Sandusky, O. The car was designed by W. K. Trapley of Newark, N. J. It will sell for $600 and the truck at $1000.

### DEALERS IN EASTON, PA., FORM TRADE ASSOCIATION.

At the first regular meeting of the Easton Automobile Trade Association, Easton, Pa., the following officers were elected to serve for one year: Thomas A. Fassitt of the Easton Auto Co., president; George A. Rader of the Northampon Buick Sales Co., vice president; James Lerch, Vim truck dealer, treasurer, and Charles H. Quig of the Quig Motor Car Co., secretary. The following were elected directors: Clyde Sandt, Overland dealer; Roy Kiefer, Kiefer & Steele Motor Co.; William Rush, Phillipsburg Buick dealer; Clarence R. Royer, proprietor of Central Garage and Machine Co.; Charles Cook of the Cook-Daw Automobile Co.

The object of the association is to afford mutual protection to its members and the public, and to advance and develop so far as possible the automobile business in the city of Easton and vicinity. The association expects to meet the first Monday of each month at the Easton Board of Trade rooms. All automobile dealers and repairers, also accessory dealers who are not affiliated at present will be asked to join.

One of the principal subjects taken up at the meeting was the labor charge for repair work, and it was unanimously decided to make a uniform charge of 90 cents per hour after May 1, 1918. This step was being taken only after due consideration and owing to the advance in labor and shortage of skilled help. The association announced that its organization was not for the purpose of taking any advantage of the public, but to better conditions between dealer and customer and to promote a more harmonious feeling among dealers.

### SINKLER HEADS SAVANNAH AUTO TRADE ASSOCIATION.

At the meeting of the Auto Trade Association, held for the purpose of accepting the organization's charter, E. B. Sinkler of the Cadillac agency was elected president.

The other officers are: Vice president, C. E. Vinson; secretary, E. S. Richardson; treasurer, S. N. Harris. These officers, together with T. A. Bryson, L. H. Dimmitt, J. H. Holcomb, J. G. Hardee, R. W. Heard, comprise the directorate.

### APPROPRIATIONS FOR PLOWING HIGHWAYS.

A bill introduced in the Massachusetts Legislature authorizing the Highway Commission to expend part of the motor vehicle fees for the purpose of keeping certain of the state's trunk lines open for highway traffic during the winter months has been reported upon favorably by the committee on roads and bridges to which it was referred.

The American Woolen Co., the Boston and the Worcester Chambers of Commerce, the Springfield Board of Trade, the Associated Industries of Massachusetts, the Hood Rubber Co. and others favored the measure.

## *New York State Jobbers Form Association*

**New Organization Will Be Affiliated with National Association of Automobile Accessory Jobbers.**

Jobbers of New York state have formed the New York State Association of Automobile Accessory Jobbers, which will be affiliated with the National Association of Automobile Accessory Jobbers. George Fritz, field secretary of the N. A. A., was present at the meeting when the organization was perfected and assisted in the work.

The state organization will handle local problems the same as the national body handles national matters. The officers of the association are: President, C. S. Owen, Chapin-Owen Co., Rochester; secretary, E. T. Ball. Joseph Strauss & Son, Buffalo; treasurer, W. J. Davis, Davis-Brown Electric Co., Ithaca. The president named an executive committee consisting of the officers and H. J. Rowerdick, W. H. Rowerdick & Son, Rochester; W. E. Foskett, Albany Hardware and Iron Co., Albany; Harrie R. Williams, A. J. Picard & Co., New York; R. Bundy, U. S. Rubber Co., Syracuse.

In addition to the companies already named those represented were: H. D. Taylor Co., Buffalo; U. S. Rubber Co., Buffalo; U. S. Rubber Co., Rochester; S. B. Roby Co., Rochester; Lee Auto Supply Co., Syracuse; Barker, Rose & Clinton, Elmira; Motor Car Equipments Co., New York; H. A. McRae & Co., Glen Falls; Farrell Auto Supply Co., Brooklyn.

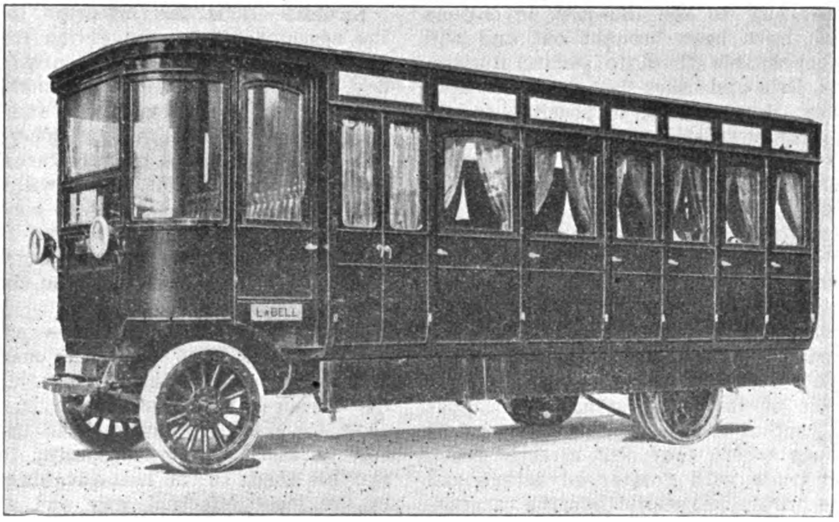
## *New Funeral Car Accomodates 38 People*

The funeral procession, an institution as venerable almost as time itself, may soon become passe, succumbing to the march of progress with its many innovations and changes in customs. In olden times the funeral cortege was made up of casket bearers, relatives of the deceased and mourners wending their way toward the last resting place on foot. With the advent of horse drawn vehicles the funeral procession was made up of a hearse and carriages, which form of cortege has been the custom for several centuries and is still the accepted form in the majority of cities, although the automobile cortege has gained great popularity in the past few years.

Now comes the funeral car, a mammoth vehicle, which carries not only the casket, flowers, undertaker and his staff, but the entire funeral party, and threatens to do away with the old form of procession. It is already in use in several cities and has many advantageous features, as it not only lowers the cost of funerals, but is far more convenient than the old system, as it moves through the city traffic to its destination with no delay and without the waiting necessitated at burial ceremonies caused by the delayed arrival of the various units of the procession.

The funeral car as it is called and which is shown in an accompanying cut, holds 38 people comfortably. It is mounted on a three-ton chassis and has a length over all of 22 feet, 10 inches. The outside width is 99½ inches and inside there is a clear width of 74 inches. The six doors and driver's door on each side have drop windows. The two doors on each side of the casket compartment have stationary windows. The rear windows are stationary and all windows of the body have silk drop curtains.

Above the doors are transoms of Florentine glass, every other one hinged. There are three electric lights on the ceiling of the body and two telephones connecting with the driver's seat. The casket compartment has a shelf 22½ inches from the floor, and fitted with rollers and stop pins. The upholstery throughout the car is Fabrikoid. The cars are usually finished in either black or gray. A step running the length of the body folds up when not in use.



**Funeral Car That Will Carry a Casket and a Company of 38 Persons Comfortably Seated.**

# *N. A. A. A. J. Will Hold Show in Chicago*

## Commissioner Webster Has Notified Members That Directors Will Ask For Endorsement at Convention

William W. Webster, National Commissioner of the National Association of Automobile Accessory Jobbers, has sent out a notice to all members of that organization announcing the intention of the board of directors to favor the holding of an accessory show at Chicago in October in connection with the meeting to be held at that time.

The circular carrying this information has been out several weeks and has elicited a large number of favorable replies to the proposition, so that it is the consensus of opinion among members that the proposition will be unanimously indorsed at the convention to be held at Hot Springs, W. Va., in June.

Commissioner Webster set forth the proposition in his circular as follows:

The board of directors by practically a unanimous vote will recommend at the Virginia Hot Springs convention the following:

First—That we change the date of our annual meeting from January to the last week in October, in consequence of which we will not in future meet at the time of the annual automobile shows, as has been our custom and which in earlier days seemed desirable, but owing to our fast increasing membership does not now seem essential.

Second—When we met in January it necessarily threw our succeeding meeting into the month of May—the worst month of the year for members to leave their business—consequently this militated somewhat against the attendance at those meetings, which is always an important factor in the success of any organization. Other reasons will be given in subsequent paragraphs.

Third—At the annual meeting in October, in conjunction with and wherever and whenever possible under the same roof, though segregated and entirely separate and apart from the convention, we will hold a live, up-to-date accessory show, which will afford the jobbers an opportunity to see the new inventions which have been brought out and will further enable them to secure illustrations, lists and other data for their catalogues, thus making it possible to get out their new catalogue close to the first of each year, which under the arrangements in the past has been quite impossible.

Fourth—Many of our associate members have felt the duplication of exhibits at the auto shows which come so close together quite burdensome in the matter of expense and otherwise, with the likelihood of even a third auto show, while on the other hand, our arrangement will permit of their displaying their goods once, and at a time, in a manner and at a place where they will directly reach their trade with greater advantage and more profitable results than the arrangements in the past have afforded.

Fifth—Outside manufacturers will be afforded the opportunity to show their goods in order to make the show attractive and thoroughly practical from every point of view. It is not, however, the intention to admit the general public; simply the jobbers and their customers—the dealers. It is not intended to charge an admission fee. Suitable cards of admission will be supplied to our members and all exhibitors on request without charge.

Sixth—The whole matter is to be held under the auspices and direction of this association, consequently every member will have an interest in it and should take pride in making it a success. It will be an attractive proposition also, from a financial point of view, a matter which must not be lost sight of, as it will afford the association an opportunity to make the money which has heretofore gone elsewhere.

William W. Webster, National Commissioner of N. A. A. A. J.

Seventh—It is the intention to hold the sessions of the convention from 10 a. m. to 1 p. m., and then adjourn for the day. In the forenoon only dealers will be admitted to the exposition and at 12 o'clock noon the doors will close to all except the exhibitors, manufacturers and jobbers and their aids. This will admit of the principals and heads of concerns, both manufacturers and jobbers, attending the convention to then come in direct contact with one another at the show in the afternoon.

Eighth—The prime purpose of this whole matter is to bring the manufacturers and jobbers closer together, it being distinctly and essentially a trade show for the manufacturer and the jobber, to assist the manufacturer to display his goods to the best advantage and in the most effectual way and at the same time enable the jobber to see conveniently and in a compact way all the latest devices and inventions in which he deals.

Ninth—Space will be awarded in the order in which requests are received, the price for same being substantially the same as exhibitors have paid heretofore, the space to be in units of 8x10 feet or 10x10 feet, or of sufficient size to suit the exhibitor.

Tenth—Acting under instructions of the board of directors, I have secured options on several splendid places in which to hold our joint convention and accessory show here in Chicago next October, which will be operated on the same fair plane and plan on which the association is operated, with equal rights to all and special privileges to none.

This whole matter will be brought at the Virginia Hot Springs convention for ratification. In the meantime I will say for your additional information, that on a recent tour of some of the directors, where this project was discussed merely in an informal way, it met with not only the hearty approval of everyone, but many manufacturers as well as jobbers were quite enthusiastistic about it and there was not, nor have I heard with one single exception, a dissenting voice on the matter. WM. M. WEBSTER,
Commissoner.

### DU PONT PHOTOGRAPHIC CONTEST FOR FIFTY PRIZES.

In order to secure photographs for illustrating the advertising and publicity matter of the various Du Pont companies, the Du Pont American Industries have offered $500 in prizes for 50 photographs illustrating the following subjects: Agricultural uses of explosive, Fabrikoid (artificial leather), industrial uses of explosives, painting, trap shooting and hunting and miscellaneous views. The prizes are as follows: First prize, $100; second, $50; two third prizes, $25 each; 14 fourth prizes, $10 each, and 32 fifth prizes, $5 each.

The contest, which will close on Sept. 1, 1918, is open to all except employees of the various Du Pont companies. Each photograph must be accompanied by the film or plate, and must carry on the back the name and address of the contestant, a description of the photograph, and such other data as may be of interest. A contestant may submit as many photographs as he desires, and there is no limit to the number of prizes that may be won by any one contestant.

Photographs submitted will become the property of the Du Pont Amreican Industries and will be judged by a committee to be appointed by the director of advertising of the Du Pont American Industries, and the prizes are to be awarded not later than Sept. 15, 1918.

All photographs submitted should be addressed to the Advertising Division, Du Pont Co., Wilmington, Del., and marked "photograph contest." Each contestant must fill out and mail with the first photograph or photographs submitted an entry blank, which may be obtained by application to the Advertising Division of the company.

# Over 11,900 retail merchants failed last year

Bankers and wholesalers are interested in these figures. They lose when the merchant fails.

Up-to-date National Cash Registers stop lax methods in Retail Stores—save time, work and money.

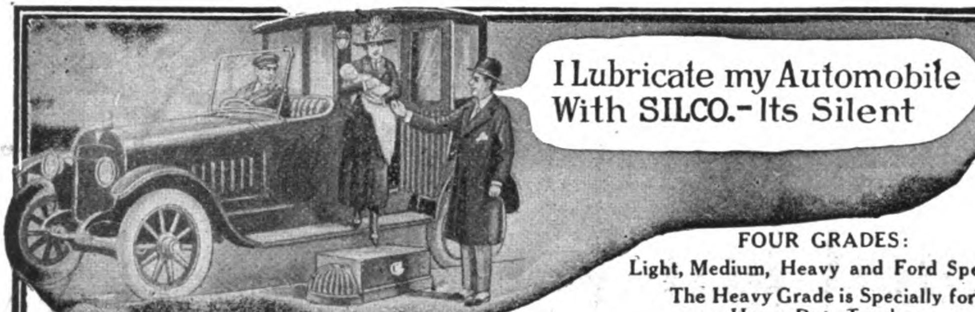
And they enable a merchant without delay to give a complete, reliable statement of his business.

Every banker and wholesaler should investigate the N. C. R. System. He will then recommend it to the merchant.

Our registers are sold on small monthly payments. 5 per cent off for cash.

*Write today for literature* *Address Department 3602.*

**THE NATIONAL CASH REGISTER COMPANY, Dayton, Ohio**


I Lubricate my Automobile With SILCO.- Its Silent

AUTOMOBILE
SMOOTH **SILCO** AS SILK
LUBRICANTS

FOUR GRADES:
Light, Medium, Heavy and Ford Special.
The Heavy Grade is Specially for Heavy Duty Trucks.

SILCO is the perfect lubricant for transmission and differential gears. It possesses far greater lubricating properties than ordinary greases. It forms a positive and lasting cushion between all points of contact, and quiets noisy gears. Silco does not leak or drip, and its efficiency is unaffected by heat or cold.

SILCO minimizes friction, and eliminates expansion from heat, thus preventing undue wear on gears and bearings. Cuts repair bills and is guaranteed to afford entire satisfaction.

*Jobbers and Dealers: Our inducements are extremely liberal. Send for further lubricating facts and special trade discounts.*

*WRITE TODAY TO*

**INTERNATIONAL LUBRICANTS COMPANY**
Manufacturers of SILCO Products

Home Office:
75 State Street, Boston, Mass.

New York Office:
51 East 42nd Street.

**THE CONGDON & CARPENTER CO., Rhode Island Distributors, Providence, R. I.**

**LOOK FOR THIS TRADE MARK**
**IT PROTECTS THE DEALER AND CONSUMER**

**SILCO**

**TRANSMISSION AND DIFFERENTIAL GREASE**
**STOPS THE LEAKS**
**FINDS THE SQUEAKS**
**INSURES CAR SERVICE**

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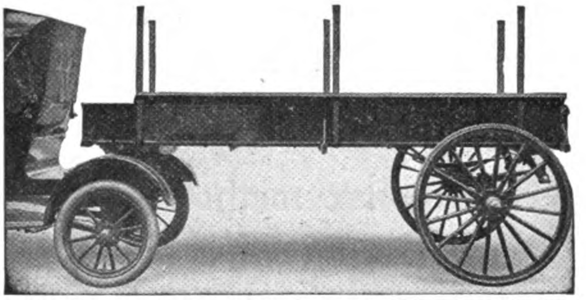
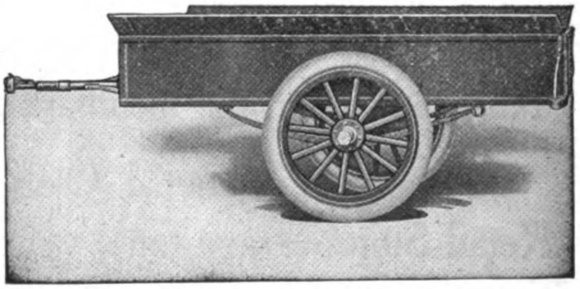




# Haul a 3000-lb. Load With Your Ford Car

A Ford runabout equipped with a Rocking Fifth Wheel, will have light truck capacity when used with **STOCKBRIDGE** 2000 or 3000 pound semi-trailers, and by uncoupling the body, which can be done in a very few minutes, the machine has all the utility of the pleasure car.

**STOCKBRIDGE Semi-Trailers** are the most practical equipment built. They are designed for truck service. They are operated with Ford economy. They can be coupled or uncoupled by any driver without help. The Rocking Fifth Wheel is easily removed. No time is lost. Simply remove six bolts. The owner has a car or a unit with truck capacity and makes no sacrifice of the qualities of either type of vehicle.

The car and semi-trailer can make 20 miles an hour on good roads and can climb any travelled grade.

**STOCKBRIDGE Semi-Trailers** are constructed for truck service. The bodies are express type, with flareboards or flareboards and stakes. The brief specifications are:

| | 2000 Pounds | 3000 Pounds |
|---|---|---|
| AXLE | 1 5-8 in. square, Timken roller bearings. | |
| SPRINGS | Platform type, 1 3-4 in. wide | Platform type, 2 in. wide |
| WHEELS | 46 in. outside diameter, artillery type hubs, 1 5-8 in. spokes | |
| TIRES | Solid rubber, 1 3-4 in. flat top, side wire | 2 in. flat top, side wire |
| EQUIPMENT | Complete Rocking Fifth Wheel ready for attaching | |
| PRICES | $195, f. o. b. Springfield, Mass. | $225 f. o. b. Springfield, Mass. |

**SPRINGFIELD TRAILER,** 800 pounds capacity, express body, semi-elliptic springs, 1 1-4 in. axle, ball bearings, 12-spoke automobile wheels, 30x3 in. pneumatic tires, price **$105,** f. o. b. Springfield.

**STOCKBRIDGE BODY COMPANY,** 130-6 UNION STREET
SPRINGFIELD, MASSACHUSETTS

# The Perfect Gear Lubricant

FOR TRANSMISSIONS AND DIFFERENTIALS

*WILL NOT RUN IN HOTTEST WEATHER—*
*WILL NOT FREEZE IN COLDEST WEATHER—*

*Less Required—*
*Lasts Longer*

EVR-LASTIN is truly a remarkable product—unequaled for transmission, differential bevel, spur or worm gears. It forms a protective coating that will not run or gum—sticks to metal under the worst strains and pressure—preventing wear and assuring perfect lubrication. Cures leaky differential troubles—eliminates grease working into the brake-bands.

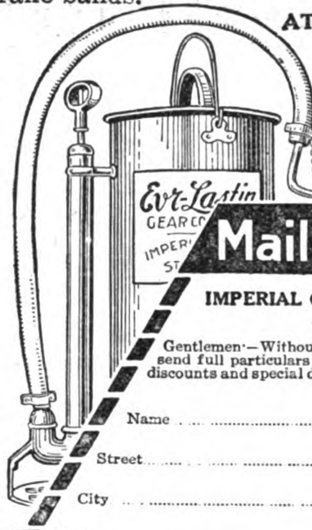
TRADE *Evr-Lastin* MARK
GEAR COMPOUND

It is only necessary to pour one-third the quantity of *Evr-Lastin* into the gear housing, that you would oil or grease. This means a big saving in money to you—furthermore under actual test, *Evr-Lastin* proves to last three to four times as long as transmission grease or oil.

**Furnished In Any Quantity**

*Evr-Lastin* comes in 5, 10, 25 and 50-lb. tins—also in 225 and 400-lb. barrels. Dealers will find that *Evr-Lastin* will more than please their customers, and will be a big money maker. Be sure and get our proposition.

**IMPERIAL OIL CO.**
3142 Locust St. - St. Louis, Mo.



**ATTENTION DEALERS**

**FREE** With first order for half or full barrel of *Evr-Lastin*, we will send you this self-measuring 20 lb. grease cabinet free —pumps ¼ lb. to the stroke.

**Mail At Once!**

IMPERIAL OIL CO. 3142 Locust St.,
St. Louis, Mo.

Gentlemen—Without any obligation on my part, please send full particulars on *Evr-Lastin* Gear Compound—discounts and special dealers' proposition

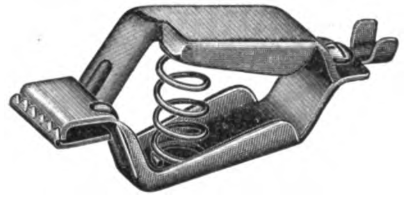
Name ..........................................

Street ..........................................

City ..........................................

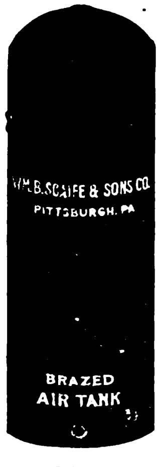
State ..........................................

## UNIVERSAL BATTERY CLIPS



Offer a quick and ready means of connecting storage batteries for charging. Simply fit your connecting cords with these clips and snap them over the battery terminals. **No. 21-A—lead plated—1½" spread of jaws.**
Sample mailed postpaid for 15c in stamps.
**Single Lots, Each 20c. Lots of 10, Each 15c.**
**Lots of 100, Each 12½c.**

**R. S. MUELLER & CO., 431 High Avenue, Cleveland, O.**



## SCAIFE COPPER-BRAZED AIR TANKS

are positively guaranteed to hold air indefinitely without loss of pressure.

**CAUTION**

Do not confuse Scaife Copper-Brazed Tanks with the cheap Welded or Soft-Soldered Tanks made by others.

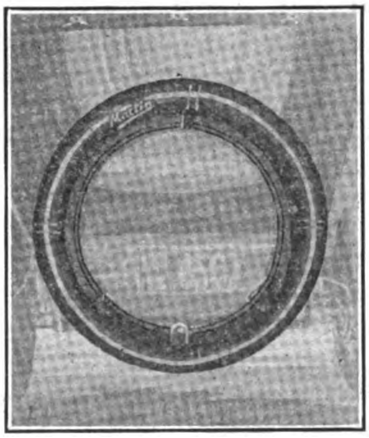
We Also Manufacture
**SCAIFE GASOLINE STORAGE OUTFITS**

*Send for Catalogues.*

**WM. B. SCAIFE & SONS CO.,**
First National Bank Bldg. PITTSBURGH, PA.

## Martin Tire Covers

The lowest priced, highest quality, fastest selling tire covers made.



**The Martin Style C Cover.**

A "sale on sight" line with all dealers. Will fit any tire whether carried on or off extra rims.
Sold in sizes listed. Made of heavy selected enameled drill, long lasting and attractive in appearance.

| Sizes | List Prices |
|---|---|
| 28-30 | $1.70 |
| 31-32 | 1.80 |
| 33-34 | 2.00 |
| 35-36 | 2.15 |
| 37-38 | 2.20 |
| 39-up | 3.00 |

**Jobbers and Dealers Write for Catalogues and Discounts.**
The Martin full line includes specialties that afford big returns to the trade.

**MARTIN MANUFACTURING CO.**
Lancaster Ohio

"NORMA"
PRECISION
BALL BEARINGS
(PATENTED)

The "nerve centers" of the car and truck—so may be defined the ignition and lighting apparatus. Weakness, inadequacy, at these centers reacts throughout the machine. Failure at these points means a failure of all the nerve-controlled functions of the car or truck. Can a car, truck, or man show "stamina", with an inherent weakness at the nerve centers?

"NORMA" Ball Bearings, by their superlative speed qualities and proved serviceability, contribute mightily to the rugged strength and service capacity of those high-grade magnetos and lighting generators which are the "nerve centers" of all cars and trucks of proved dependability.

Be *Sure*—See That Your Electrical Accessories Are "NORMA" Equipped.

THE NORMA COMPANY OF AMERICA
1790 BROADWAY NEW YORK
Ball, Roller, Thrust, Combination Bearings

## INDEX TO ADVERTISERS

Page
Adamson Mfg. Co..................67-D
Advance Auto Accessories Corp..................C
American Bureau of Engineering, Inc.................. 4
American Technical Society..................61
Auglaize Motor Car Co..................63
Auto Exchange..................59
Auto Salvage Co., Inc..................59
Auto Wrecking Co..................58

Bacon Service..................60
Ballman-Whitten Mfg. Co..................60
Bearings Service Co..................68
Bilodeau Ball Bearings Works..................66
Boston Auto Parts Co..................59
Bowser & Co., Inc., S. F..................61
Brunner Mfg. Co.................. 9
Budrick Rubber Co..................55
Bunting Brass & Bronze Co..................62

Carborundum Co..................B
Champion Ignition Co..................55
Chase & Co., L. C..................56
Colorado Tire and Leather Co.................. 8
Columbus Varnish Co..................58
Continental Auto Parts Co..................60
Corp Brothers..................59
Curtis Pneumatic Machinery Co..................62

Detroit Battery Co..................56
Detroit Magneto Exchange..................58
Dixon Crucible Co., Jos..................68
Dyer Co., G. H..................A

Egry Register Co..................57

Faw, Inc., J. H..................61
Firestone Sales Co..................10
Fitzgerald Mfg. Co.................. 6

Garford Motor Truck Co..................64
Greenfield Tap and Die Corp..................57

Harvey Spring and Forging Co.................. 1
Higgins Spring and Axle Co..................Cover

Imperial Brass Mfg. Co..................60
Imperial Oil Co..................53

## INDEX TO ADVERTISERS

(Continued)

International Lubricants Co....52
International Metal Polish Co....56
International Motor Products Co....63

Jenkins Vulcan Spring Co....68

La Fayette Engineering Co....56
Lawson, F. H., Co....67
Lenthe, D....58

Mabey's Electric and Mfg. Co....62
Martin Mfg. Co....53
Mossberg Co., Frank....Cover
Motor Accessories Corp.... 2
Motor Specialties Co....64
Mueller & Co., R. S....53

National Cash Register Co....51
New Departure Mfg. Co....60
New Era Spring and Specialty Co.... 7
Norma Co. of America....54

Piston Ring Co....64
Puritan Machine Co....58

Rosenfield & Co., James....58
Ross-Gould List and Letter Co....62

Scaife, Wm. B. & Sons Co....53
Schrader's Son, Inc., A....63
Shaler Co., C. A.... 5
Stenman Electric Valve Grinder Co., Inc....66
Stockbridge Body Co....52
Sullivan Motor Car Co....66

United Engine and Mfg. Co....64
United States Air Compressor Co....65

Vanderpool Co....60
Vulcan Machine and Tool Co....65

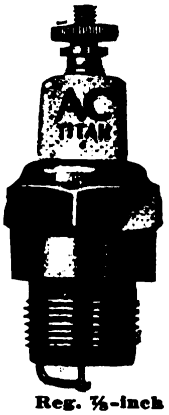
Walden-Worcester, Inc....Cover
Webber Mfg. Co....60
Weston Electrical Instrument Co....63
Williams Foundry and Machine Co....62
Wisconsin Auto Top Co.... 3

The AUTOMOBILE JOURNAL

Is the oldest Automobile magazine published in America devoted wholly to the owners of passenger cars.

*A quality magazine with prestige and circulation that brings results to advertisers.*

TIMES BUILDING
PAWTUCKET, R. I.



Reg. ⅞-inch Titan

Albert Champion Means AC Spark Plugs

*The Standard Spark Plug of America*

LOOK FOR AC ON THE PORCELAIN

PERFORMANCES, not claims, are what count. AC is exclusive equipment on NINETY makes. There is an AC for every type of motor.

SOLE MANUFACTURERS
Champion Ignition Co., FLINT, MICHIGAN

GOOD TIRES AT CUT RATE PRICES

High grade firsts—not seconds, not blemished or rejected tires, but good tires; tires that will bring every user back for more. Sold without guarantee.

RIBBED TIRES

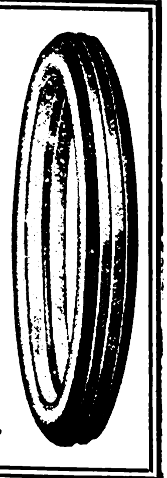
At these prices are the biggest bargains you ever purchased in your life—Think of it!

PRICES TO DEALERS:

| | Non-Skid | Tubes | | Non-Skid | Tubes |
|---|---|---|---|---|---|
| 30x3 | $8.00 | $1.90 | 32x4 | $16.10 | $3.05 |
| 30x3½ | 10.25 | 2.15 | 33x4 | 16.80 | 3.10 |
| 32x3½ | 12.00 | 2.25 | 34x4 | 17.25 | 3.20 |

Write now for dealers' proposition, or better yet, rush in a trial order with Chicago or New York draft, express or P. O. money order. If you prefer, send 20 per cent. of amount with your order and we'll ship goods C. O. D., subject to examination. Investigate this now. Let us tell you how we can do it.

BUDRICK RUBBER CO.
Dept. C, 36 S. State St., Chicago.

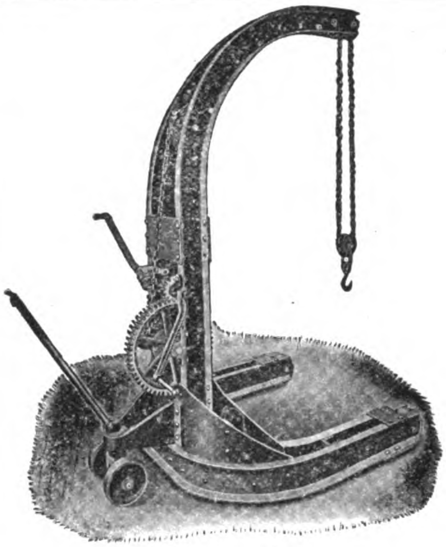


ONE GALLON
BLUE RIBBON
TRADE MARK
REGISTERED U.S. PAT. OFFICE
GREASELESS CREAM
AUTOMOBILE
BODY GLOSS
INDIANAPOLIS, IND.

KEEPS THE BODY
OF YOUR CAR
*Shining*
LIKE A MIRROR

No Grease to Catch Dust
Does Not Coat the Finish
Best Furniture Polish Made
Use With Spray if Desired

**International Metal Polish Co.**
INDIANAPOLIS, INDIANA



SAFETY FIRST

*The "Lafayette" Portable Steel Crane*

Made of steel—it will not break. Double locked with load. Safe. Low base. Ample power. Roller bearings. No garage or repair shop can afford to be without them. A complete hoisting and conveying machine.

STANDARD SIZES

| No. | Height | Overhang | Capacity | Ht. of Base | Weight | List |
|---|---|---|---|---|---|---|
| 6 | 8'-6" | 3'-6" | 5000 lbs. | 8 inches | 900 lbs. | $100.00 |
| 5 | 7'-6" | 3'-0" | 4000 lbs. | 7 inches | 700 lbs. | $85.00 |
| 4 | 6'-6" | 2'-6" | 3000 lbs. | 6 inches | 500 lbs. | $70.00 |

*For Sale by Jobbers Everywhere or Write*

**The LaFayette Engineering Co., Mfgr's, LaFayette, Indiana**

DETROIT BATTERIES

For every make and model of motor car carrying an electric starting system. Replacements on cars no longer manufactured can be had promptly.

**Detroit Battery Co.**
**Detroit, U. S. A.**

CHASE Leatherwove
"To like the hide in most respects In some respects to better"

CHASE MOHAIR VELVETS FOR UPHOLSTERY

CHASE DREDNAUT Motor Topping

CHASE PLUSH AND WOOL MOTOR ROBES

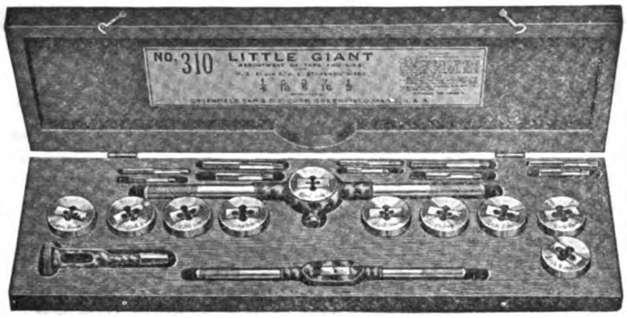
Familiarize yourself with Chase Products.

The choicest of upholstery fabrics for motor cars, Leatherwove or Mohair Velvets.

Wonderful robes for the Motorists.

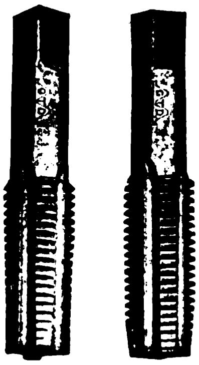
**L. C. CHASE CO.**
**BOSTON**

New York San Francisco Detroit Chicago



Little Giant Screw Plate

# The Complete Line of Threading Tools



Hand Taps

Whatever your requirements in the screw cutting line may be, we can meet them, as our line is the most complete in the world. Bear in mind that our service in the threading tool line is unexcelled.

Ask for a copy of our No. 37 general catalog which contains besides the products listed below many tables of valuable information for garage repair men, etc.

Below is a partial list of products shown in the catalog.

Little Giant Die

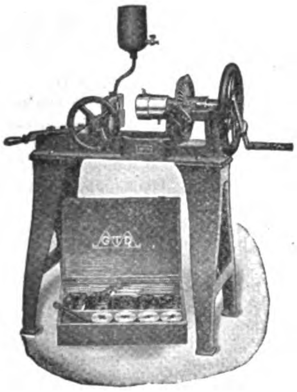
**Taps**—All kinds, for hand and machine use, in all thread standards.

**Dies**—Several styles, for hand and machine use, in all thread standards.

**Screw Plates**—Many styles and assortments for bolts, nuts and pipe, with Automobile (S.A.E.), U.S.S. or V threads, combination assortments with both U.S.S. and S.A.E. thread taps and dies.

**Pipe Tools**, Wrenches, Vises, Cutters, Stocks and Dies.

**Reamers**—Hand and Machine, bit brace and straight shanks, all types.



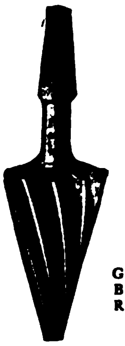
G. T. D. Threading Machine

Send for a catalog for ready reference.

GTD

## Greenfield Tap and Die Corporation

**Greenfield, Mass.**



G. T. D. Burring Reamer

New York, 28 Warren St.
Chicago, 13 South Clinton St.
Canadian Factory, Wells Brothers Company of Canada, Ltd., Galt, Ont.

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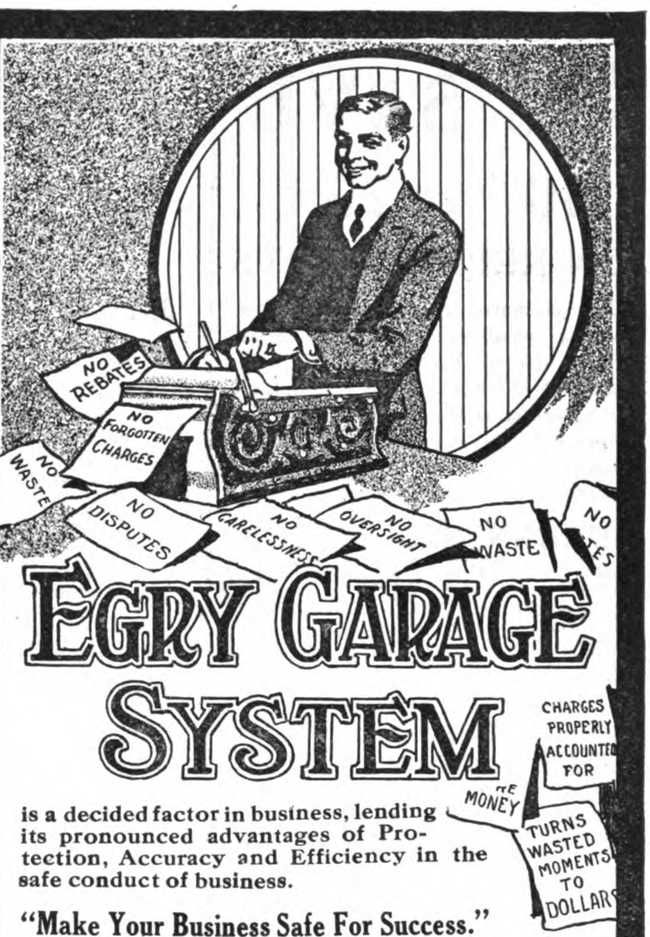

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is a decided factor in business, lending its pronounced advantages of Protection, Accuracy and Efficiency in the safe conduct of business.

**"Make Your Business Safe For Success."**

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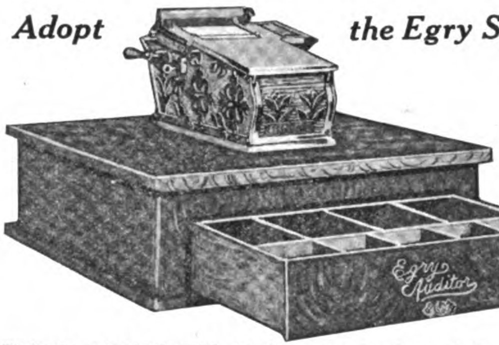

**This is what it will do for you, just as it is accomplishing these splendid results for hundreds, yes, thousands, of concerns in yours and similar lines of business.**

A complete record of each day's business; perfect control of all charges; safeguard your cash transactions; avoid unpleasant disputes; make your employees careful; increase trade confidence; cause the customer to automatically become a part of the system; aid in stock accounting; keep you posted on the details of your business by means of a secret record of each transaction; overcome the element of worry and waste; create efficiency.

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Let the name "EGRY" be associated with your every thought of "BETTER BUSINESS."

INCRE PROFITS
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PROFITABLE RETURNS

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## 50% to 75%

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**Our immense volume makes this saving possible. Only the best Parts offered backed by our iron clad GUARANTEE of "Complete Satisfaction or Money Cheerfully Refunded." Save this list for future reference. Many excellent BARGAINS.**

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| Flanders 20 | 50.00 | Overland 71 | 75.00 |
| E M. F. 30 | 50.00 | Overland 79 | 75.00 |
| Rambler Model 64 | 50.00 | Overland 83 | 75.00 |
| Partin-Palmer | 50.00 | Case 1911 | 75.00 |
| Maxwell 25 | 60.00 | Stearns 1911 | 75.00 |
| Cadillac 09-10 | 60.00 | Moon 1912 | 75.00 |
| Cadillac 1912 | 75.00 | Velie 40, 1912 | 85.00 |
| Speedwell 40 hp. | 75.00 | Buick 17 | 90.00 |
| Chalmers 6, 1915 | 100.00 | Mitchell 6-60 | 100.00 |
| Drummond 8, 1917 | 200.00 | Packard 30 | 150.00 |

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| Velie 4 cyl., 1915, starter and generator | $150.00 |
| Apperson 8 cyl., starter | 200.00 |
| Jackson 35, Unit Plant | 75.00 |
| Chalmers Mod. 10, Unit Plant | 125.00 |
| Menominee Truck, Unit Plant | 100.00 |
| King 1914, Unit Plant | 125.00 |
| Cadillac 8 cyl., Unit Plant | 300.00 |

### ALL MOTORS GUARANTEED IN EXCELLENT CONDITION

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| Transmissions | 25.00 | 50.00 |
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| Radiators | 10.00 | 25.00 |
| Springs | 1.50 | 2.50 |
| Spring Leaves | .25 | .50 |
| Bearings, any make | .50 | 5.00 |
| Ward & Leonard Generators | .... | 15.00 |
| Gray & Davis Generator with cut out | .... | 20.00 |
| Splitdorf Mag. & Coil | .... | 10.00 |
| Remy Mag. & Coil | .... | 10.00 |
| Bosch N U 4 | .... | 20.00 |
| Bosch D U 4 set spark | .... | 25.00 |
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| Splitdorf Dixie | .... | 20.00 |
| Mea H. T. Mag | .... | 25.00 |
| Eisemann, H. T | .... | 35.00 |
| Simms H. T | .... | 20.00 |
| Splitdorf Coils | 5.00 | 7.50 |
| Remy Coils | 5.00 | 7.50 |
| Bosch Coils | .... | 7.50 |
| Windshields | 6.00 | 10.00 |
| Electric Head Lamps, Pair | .... | 5.00 |
| Gas Head Lamps, Pair | .... | 4.00 |
| Oil Side Lamps for Ford, Pr. | .... | 2.00 |
| Electric Side Lamp, Pair | .... | 3.00 |
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| Spot Lights with Mirror | .... | 3.50 |
| Round Gas Tanks, 12 Gal | .... | 1.50 |
| Round Gas Tank, 12x35, for Vacuum | .... | 6.00 |
| Carter Gravity Tank | .... | 4.00 |
| Stewart Vacuum Tank | .... | 7.50 |
| Tube Vulcanizer | .... | .50 |
| Foot Pumps | 1.50 | 2.50 |
| Spark Plugs | .25 | .50 |
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| Reliners 32x3½—32x4 | .... | 1.00 |
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| Blow out patches outside | .... | .35 |

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**BETTER Service BETTER Prices**

New Parts for All Cars.

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| Bosch D4 and Dr4 | 25.00 |
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| Splitdorf 4 cyl., Models A, T, X and D | 10.00 |
| National 4 cyl. low tension | 8.00 |
| Briggs 4 cly. low tension | 8.00 |
| Remy 4 cyl., type R L | 15.00 |
| Simms SU4 high tension | 22.00 |

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| Deaco 6 volt | $12.00 |
| Auto Lite 6 volt | 15.00 |

**COILS.**

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| Splitdorf T S type | $10.00 |
| Splitdorf box type | 6.00 |
| Bosch type A | 12.00 |
| Remy box coils | 6.00 |
| Remy type LC and LE | 8.00 |
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A wax polish in liquid form. Does not collect dust and is not affected by water. Apply with a soft cloth and polish. Ready for use at once.

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| 32x3½ | .. 5.00 & up | 35x4½ | .. 8.00 & up |
| 34x3½ | .. 6.00 & up | 36x4½ | .. 8.00 & up |
| 31x4 | .. 5.00 & up | 37x4½ | .. 8.50 & up |
| 32x4 | .. 5.50 & up | 35x5 | .. 9.00 & up |
| 33x4 | .. 6.50 & up | 36x5 | .. 9.00 & up |
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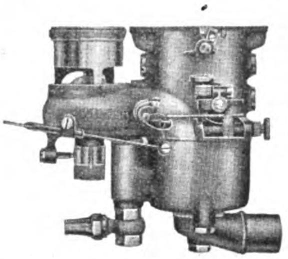
**AUTOMATIC CARBURETOR**



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Reinforces and strengthens the running board on light-weight cars. It is a necessity to Ford cars; can also be used on weakly supported running boards on any car or truck. Gives firm support to running board for carrying batteries, tool boxes, luggage, etc. Can be attached in a few minutes without drilling holes.

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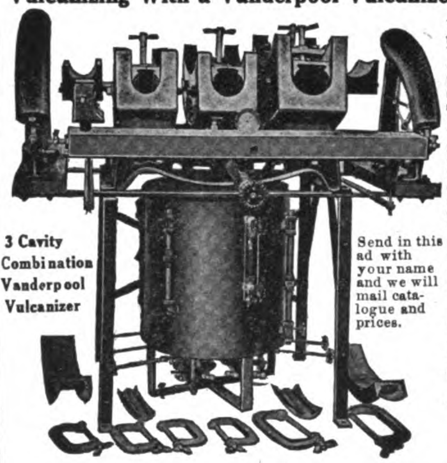

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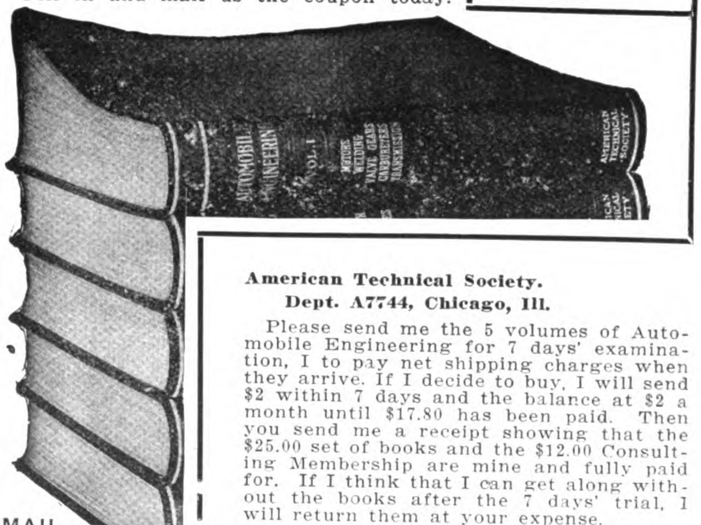

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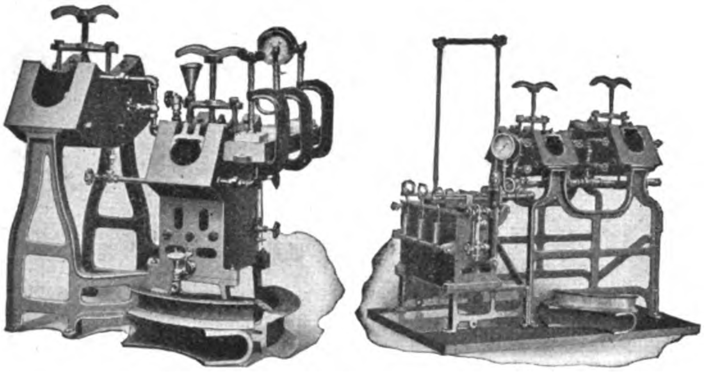
Reference..................................



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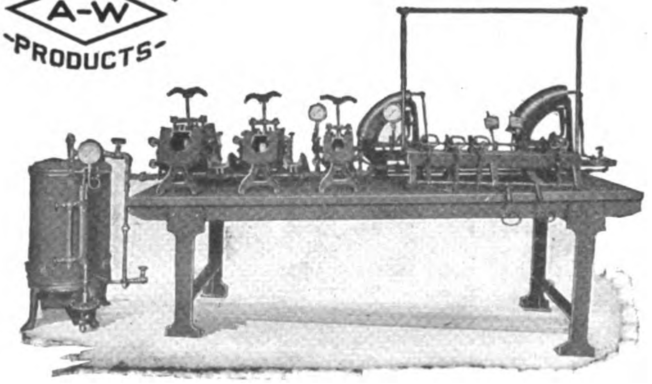

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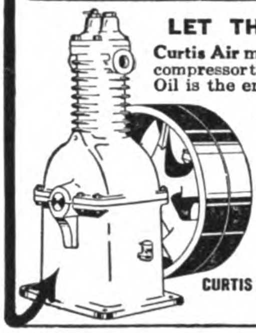
## CURTIS AIR FREE FROM OIL

## MOTORISTS *Have* CONFIDENCE IN THIS SIGN



**LET THEM FIND IT AT *YOUR* DOOR.**

**Curtis Air** means more mileage, because **Curtis** is the only air compressor that can't flood cylinder with more oil than it can use. Oil is the enemy of rubber. It rots tires, causing blow-outs.

**A Curtis Compressor Is Dependable**

requires practically no attention, costs very little, quickly pays for itself, always delivers the kind of cool, clean air that makes tires last longer.

**5 sizes and 125 combinations.** Write for full particulars and let us tell you why the **Curtis** will prove to be your best investment. Ask your jobber for prices—but be sure and mention **Curtis**—the name is your protection against substitution

**CURTIS PNEUMATIC MACH. CO.** 1621A Kienlen Ave. St. Louis, Mo.
Branch Office: 531A Hudson Terminal, New York

---

ELECTRIC GLUE POT

Mabey's Dry Heat Electric

## Glue Pot

**No flame; no soot or smoke. All danger of fire is eliminated**

| Capacity | Price without cover |
|---|---|
| 1 qt. | $ 9.50 |
| 2 qts. | 11.00 |
| 3 qts. | 12.75 |
| 4 qts. | 15.75 |

**Century Automobile Cigar Lighter, Complete $1.00 Each, F. O. B. Indianapolis.**

*DEALERS—Write For Prices.*

**MABEY'S ELECTRIC & MFG. CO.**
968 Ft. Wayne Avenue INDIANAPOLIS, IND.

---

## Your Prospective Customers

are listed in our Catalog of 99% guaranteed Mailing Lists. It also contains vital suggestions how to advertise and sell profitably by mail. Counts and prices given on 6000 different national Lists, covering all classes; for instance, Farmers, Noodle Mfrs., Hardware Dlrs., Zinc Mines, etc. *This valuable Reference Book free.* Write for it.

**Strengthen Your Advertising Literature**

Our Analytical Advertising Counsel and Sales Promotion Service will improve both your plan and copy, thus insuring maximum profits. Submit your literature for preliminary analysis and quotation—no obligation.

# Ross-Gould Mailing Lists St. Louis

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## Bunting Bearing Bronze IN Cored Bars

BUNTING BEARING BRONZE

**Bunting Bearing Metal is standard today with both Manufacturer and Repairman.**

**Is for sale by most any Jobber or can be purchased direct from us.**

**STOCK SIZES**

| PIECE NO. | Outside Diameter | Inside Diameter | Length | Approximate weight |
|---|---|---|---|---|
| A | 1 | ½ | 12 | 2 |
| B | 1¼ | ½ | 12 | 3½ |
| C | 1½ | ¾ | 12 | 5 |
| D | 1¾ | ¾ | 12 | 7 |
| E | 2 | 1 | 12 | 8½ |
| F | 2¼ | 1¼ | 12 | 10 |
| G | 2½ | 1½ | 12 | 11½ |
| H | 2¾ | 1¾ | 12 | 12¾ |
| I | 3 | 2 | 12 | 13¾ |
| J | 3¼ | 2¼ | 12 | 15½ |
| K | 3½ | 2½ | 12 | 17 |
| L | 4 | 3 | 12 | 21 |
| M | 4¼ | 3¼ | 12 | 20 |

**The Bunting Brass & Bronze Co.**
**727 Spencer Street** **Toledo, Ohio**

## *Will Somebody Else Get Your Share?*

If you can repair and adjust Electrical Equipment, you will get the cream of the garage business and make more money. With the increasing demand for service of this sort, you must equip to handle the business, or lose it to your more enterprising competitor.

**Weston** Model 280 GARAGE TESTING INSTRUMENT

is your one great and urgent necessity, to enable you to locate electrical troubles quickly and apply the proper treatment to remedy them. Its possession will place you a long way ahead of your competitor not so equipped. This instrument is extremely accurate, durable and serviceable. It is the most practical electrical equipment you can install.

The Weston Company is pre-eminent throughout the world in the production of highest grade Electrical Precision Instruments.

WRITE US NOW for our Special Proposition to Garage Owners. It will show you how you can handle electrical apparatus intelligently and profitably.

**WESTON ELECTRICAL INSTRUMENT CO., 103 Weston Ave., Newark, N. J.**

*23 Branch Offices in the Larger Cities*

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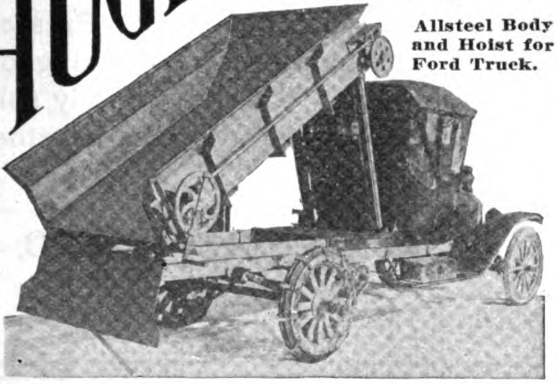
## AUGLAIZE HOIST



Allsteel Body and Hoist for Ford Truck.

### Boosts the Load With the Least Effort

**QUADRUPLE WORM GEAR**

Built in sizes up to 5 tons. Weighs less than any other hoist and covered with a liberal guarantee. **Prices up to 1½ tons, $83.00; from 1½ to 5 tons, $109.00.**

**AUGLAIZE ALSTEEL BODIES**

Staunchly constructed of all steel and guaranteed against defective material and workmanship. Will carry 50% overload. Prices range from $150.00 to $225.00, according to size.

*Auglaize Special Alsteel Body and Hoist for Ford Truck*

Carrying capacity from 2700 to 3000 lbs. of gravel, sand, crushed stone or coal; approximate weight, 550 lbs. **Retail price, $206.25. Equipped with the Auglaize Powerful, Speedy, Light-Weight Hoist.**

**Dealers allowed a liberal commission and selling co-operation. Write at once for catalog and sales plans.**

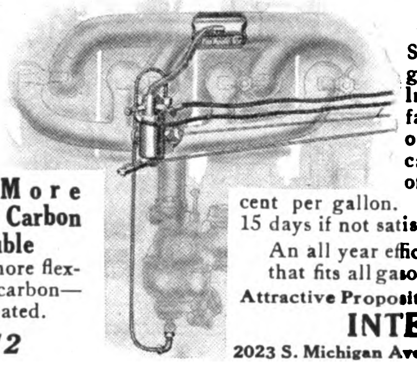
**THE AUGLAIZE MOTOR CAR CO., New Bremen, Ohio**

---

## *PERFECTION 5-IN-ONE VITALIZER*

**Instant Heating Unit That Eliminates Cold Weather Troubles.**

A combination Heating Unit comprising Moistener, Electric Super-Heater Primer, Exhaust Super-Heater and Accelerator.



**More Power — More Mileage — Less Carbon —Less Trouble**

A smoother and more flexible engine with carbon—Practically Eliminated.

*Price $12*

Starts a cold engine instantly. Increased satisfaction in the operation of your car with a saving of 25 to 60 per cent per gallon. Money back in 15 days if not satisfactory.

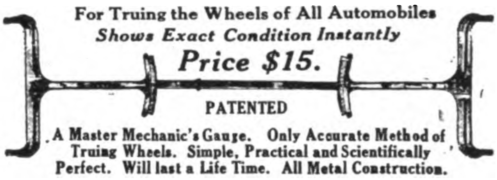
An all year efficiency device that fits all gasoline engines.

Attractive Proposition for Dealers.

## Perfection Wheel Truing Gauge

For Truing the Wheels of All Automobiles

*Shows Exact Condition Instantly*



*Price $15.*

PATENTED

A Master Mechanic's Gauge. Only Accurate Method of Truing Wheels. Simple, Practical and Scientifically Perfect. Will last a Life Time. All Metal Construction.

***Save Your Tires***

Keep Your Wheels in Alignment.

A Real Service for Car Owners, Fleet Owners, Repair Men, Garages, Tire Representatives and Dealers. Can be Used on Any Automobile—Anywhere.

**INTERNATIONAL MOTOR PRODUCTS CO.**

2023 S. Michigan Avenue Perfection Motor Products Chicago, Ill., U. S. A.

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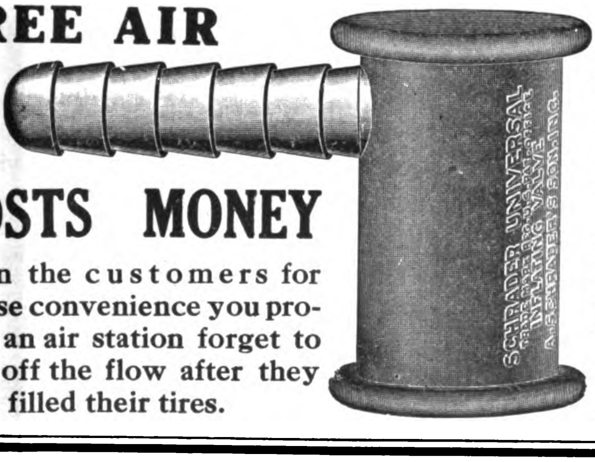
## FREE AIR



## COSTS MONEY

when the customers for whose convenience you provide an air station forget to turn off the flow after they have filled their tires.

**Guard against this waste by attaching a**

## Schrader Automatic Inflating Valve

**to your air hose.**

**Thanks to this appliance your bottled air locks itself into the tank the minute it is taken off the tire-valve. You turn on the air by pressing the nozzle of the inflating valve against the tire-valve and you turn it off by removing the device from the tire-valve.**

**Made to fit any diameter of hose from ¼ in. to ⅝ in.**

**PRICE $1.25** in U. S. A.

**W. S. S.**

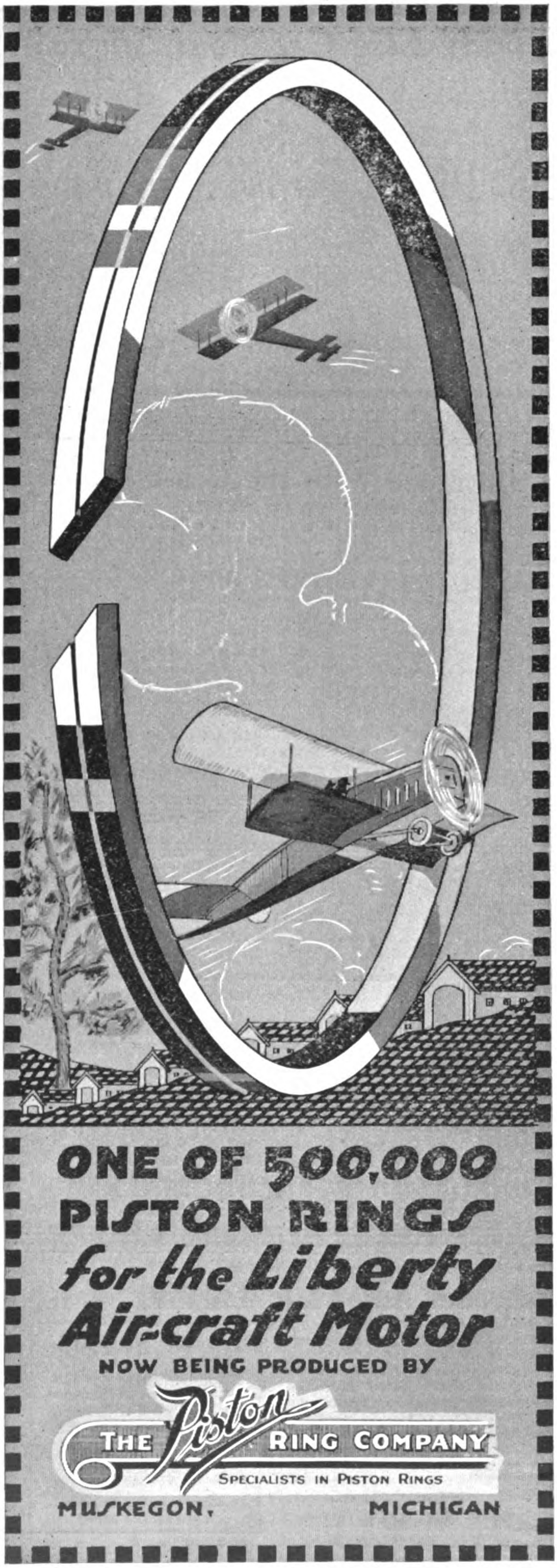
| | | |
|---|---|---|
| We | Suggest | Stamps |
| War | Savings | Stamps |
| Without | Shells | Soldiers |
| Would | Soon | Succumb |
| War | Savings | Stamps |
| Will | Supply | Soldiers |
| With | Shells | |

*Buy all you can and help to win the war.*

*Manufactured by* **A. SCHRADER'S SON, Inc.**

**800 Atlantic Avenue, Brooklyn, N. Y.**

*Schrader products were awarded a Grand Prize and two Gold Medals at the Panama Pacific International Exposition. "There's a Reason."*



ONE OF 500,000 PISTON RINGS for the Liberty Aircraft Motor

NOW BEING PRODUCED BY

THE Piston RING COMPANY

SPECIALISTS IN PISTON RINGS

MUSKEGON, MICHIGAN

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MOSCO

# Timer For Ford Car

Extra heavy pressed steel shell, aluminum finish. Insulating ring of gray bone fibre.

Terminals insulated all the way through. One-hand, self-closing oiler. Pressed steel arm and compression spring on brush assembly. Brush assembly sold separately. Interesting prices. Immediate delivery.

***MOTOR SPECIALTIES CO.***
*MANUFACTURERS*
***WALTHAM MASS.***

---

# Garford MOTOR TRUCKS

**Trucks of 1, 1½, 2, 3½, 5 and 6 ton capacity. 4½, 7 and 10 ton Tractors. The Garford Road Builder.**

**THE GARFORD MOTOR TRUCK CO., Lima, Ohio.**

---

## The MANLEY GARAGE AND SHOP EQUIPMENT

**Every garageman and repairman should get our catalog. You'll find in it just the time and labor savers you need, and their prices will astonish you by their moderateness.**

***Send for your copy of this catalog today***

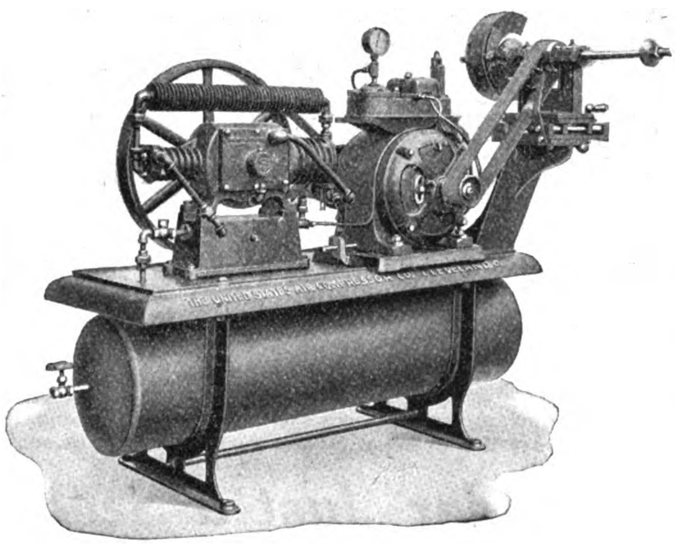
**THE UNITED ENGINE & MFG. CO.**
**Hanover, Pa.**

# A Combined Compressor or Buffer and Grinder Head

GARAGES and tire shops may affect a considerable saving by purchasing this combination instead of two machines and two motors.

Maximum efficiency will be obtained from either unit and the saving made will include conservation of valuable space as well as a saving in first cost.

The DeLuxe Two Stage Automatic Air Compressor unit needs no introduction, having given unequalled success for several years. It incorporates many definite and valuable improvements and is to be found in a majority of the better garages throughout the country.



Send the coupon for descriptive literature.

THE buffer or grinder head will likewise withstand close scrutiny by the best experts. Motor and compressor are fully enclosed and absolutely protected against dust and dirt from buffer. Compressor or buffer can be operated singly or together while automatic controls prevent overcharging of tank.

Garage and tire men should become familiar with this machine, whether in the market at present or not, by getting our descriptive circular.

We also make a complete line of two stage and single stage compressors.

**The United States Air Compressor Co.,**
**6538 Carnegie Ave., Cleveland, Ohio**

Please send circular on new combination machine, also your new Catalog advertised in Accessory and Garage Journal to

Name.......................................Address.......................................City.......................

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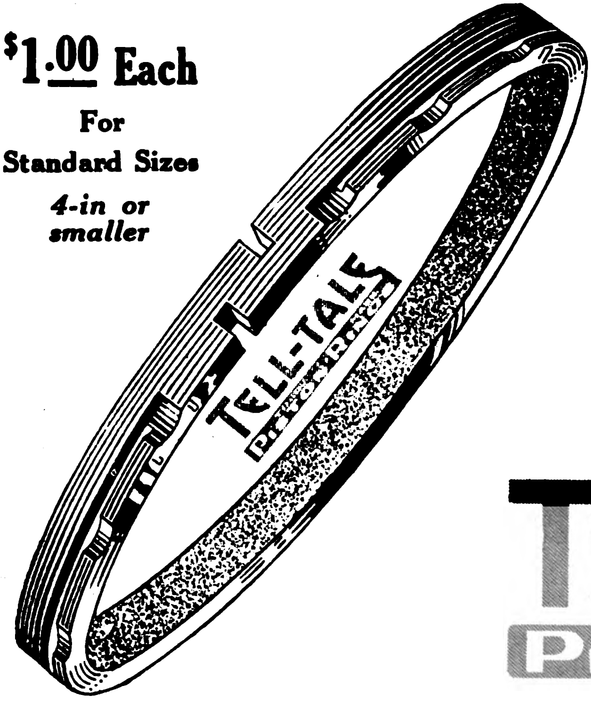
**$1.00 Each**
**For**
**Standard Sizes**
***4-in or smaller***



# A Big Winner

Repeat orders for Tell-Tale Piston Rings prove that it has made a big hit with car owners as well as repair men.

Car owners everywhere are telling their friends about it and they too are going to the repair man who is wise enough to install these rings.

You can get the piston ring business of your community, save money for your customers, and make more money for yourself by pushing

**TELL-TALE**
**TRADE MARK.**
**PISTON RINGS**

This is the only piston ring that takes care of the surplus oil. It absolutely prevents oil from reaching the combustion chamber, and stops the accumulation of carbon. The oil channel and vents in the wearing surface solve these vexing problems.

Tell-Tale Piston Ring is individually cast. Its construction is covered by basic patents. You can easily convince yourself that it is the best ring you ever saw or heard of —without cost or obligation. Write today for booklet and free trial plan.

**Vulcan Machine and Tool Company, 915 Olive Street, St.Louis, Mo.**

# "Necessity is the Mother of Invention"

# STENMAN VALVE ELECTRIC GRINDER

## "BORN OF NECESSITY"

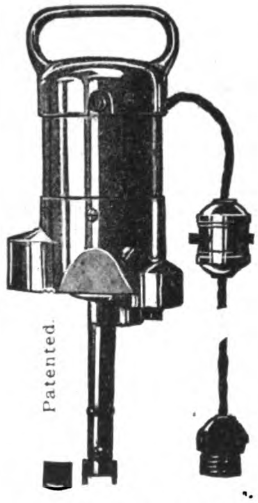
**What Appears to be a Non-Essential or a Luxury Today Is An Absolute Necessity Tomorrow**

Let your mind wander back a bit to kerosene lamps, hand cranking, inflating tires by hand and back power, removing tires with crow bar and jimmy, gas and oil sold from hand measures, etc. Then to today. Electric lights, self starters, demountable rims, air compressors, self measuring gas and oil pumps, etc. Where will you find a repair shop or garage today that does not include such devices in its equipment?

## *Consider Just a Second*

For over twenty years valves on gasoline motors have been ground by hand, with a screw driver generally. Every other form of labor in connection with the garage and the repair shop has been lessened, made easier and more efficient by the use of devices, created and produced because of the necessity.

Mull that over a moment—Visualize it—Don't you sense the possibilities of what this device means to you? Then get this—A Stenman Grinder will be part of the equipment of every shop in the land in the near future—Because



## REPAIR SHOP PROFITS ARE MADE ON LABOR

**Your Repair Shop Requires It. Efficiency Calls For It. Your Cash Drawer Demands It.**

The STENMAN ELECTRIC VALVE GRINDER bears the same relation to hand valve grinding that the vacuum cleaner does to the old corn broom method of carpet cleaning. Once tried it is indispensable. Ten days' usage and it has paid for itself.

The STENMAN will grind a set of eight valves in 20 minutes. Whereas, it takes two hours or more to grind them by hand. And we guarantee the Stenman to do a better and more even job. Also—that a novice can operate it.

Plugs in on any lamp socket—A or D current. Regular stock 110, 130 volts. Made for higher voltage where required. State voltage desired when ordering.

**After the most severe tests and tryouts had been made by their engineers these Grinders have been bought and are in use by the U. S. Army, Naval, Aviation and Postal Departments. Also, by the U. S. Steel Corp., Standard Oil, Gulf Refining, Western Electric and many up-to-date garages and shops in the East.**

**The universal use of the STENMAN ELECTRIC VALVE GRINDER is limited only to our ability to supply them.**

An interesting distributing proposition to high class jobbers where we are not already represented.

**Our patents are basic and will be protected.**

**The Stenman Electric Valve Grinder Co., Inc.** 42 Southbridge St. Worcester, Mass.

---

**Guaranteed Bearings**

We Exchange Rebuilt Bearings for old or worn ones **BILODEAU** BALL BEARINGS WORKS

## ECONOMY *Plus* EFFICIENCY

These words mean great strength toward winning the war. They form our policy—and by the standard of that policy we are continually schooling garage men and repair men to avail themselves of our exceptional service of **Rebuilding Worn Bearings.**

**Bilodeau Rebuilds All Makes of Worn Bearings, to Run as True as When New.**

Write at once for catalog, listing types, sizes and prices of standard bearings. Trade discounts confidential.

**BILODEAU BALL BEARING WORKS**
66 Stanhope Street, BOSTON, MASS.

---

## SELL SULLIVAN TRUCKS

**One of the few staple and practical trucks on the market.**

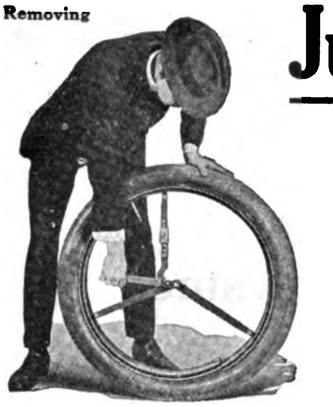
**Our selling policy and proposition is the most liberal ever offered to the trade.**

**One Model, 3,000 Lbs. Capacity**
**Chassis Price, $1,600**

***Write for complete details***

**SULLIVAN MOTOR CAR CO.**
**Rochester, New York**

Removing



Showing Lawco being used on Kelsey Rim. Tool placed inside. Lifting on lever expands rim sufficiently to unlatch dovetailed lock. Used in same manner on Detroit rim.

# Just One Minute

**To Remove Tire From Rim With**

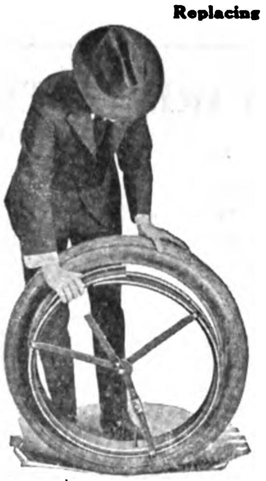
**THE LAWCO RIM TOOL**

Just three simple movements—breaking, contracting and latching—and your tire is free from any demountable transversely split rim in **less than a minute.**

The Lawco Rim Tool gives results quick as a monkey wrench. Its claws are hooked over the rim and contracted by a simple motion of the lever. The lever locks the tool automatically and holds the contraction. This leaves both hands free to remove tire. Having been repaired, tire can be put back on while the rim is still in the grip of the tool.

To latch rim at the split, tool is placed inside rim. It will fit inside because one arm has a self-adjusting claw capable of shortening the radius of the arm. A reverse movement of the lever expands the tool and rim as much as is necessary to permit latching of the ends.

Replacing



Effect produced by hooking adjustable claw on the side opposite from the other two claws. Causes rim to contract in a helical form without either end in any way disturbing the valve stem. This also makes it very easy to slip rim out and in.

## Price, $3.50

**LAWCO CROWN FENDERS**

make Ford Pleasure and Commercial Cars look like higher priced automobiles and prevent rattling.

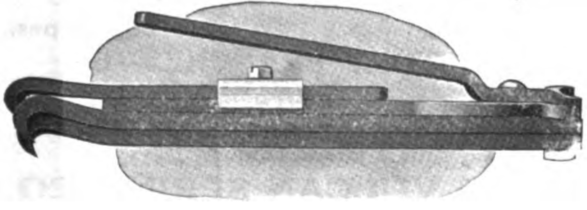
**LAWCO SILENCER**

eliminates back pressure and loss of power. For any car.

Write for circular.

*Get the LAWCO Rim Tool from your Dealer. If he can't supply you, write us.*

**THE F. H. LAWSON CO., Dept. G, Cincinnati, Ohio.**



Closes like a jack knife to go in tool box.

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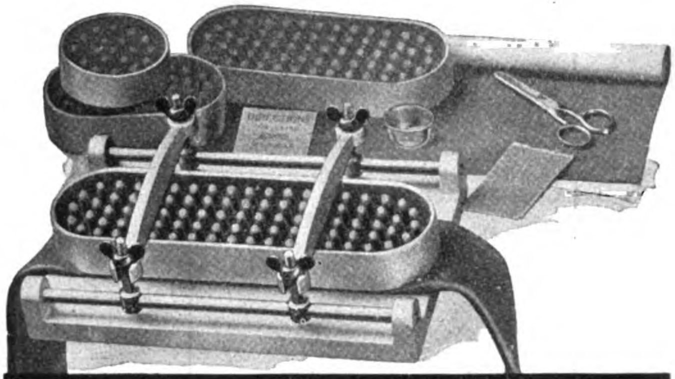

# Do Tube Repairing

This Model S-2 Adamson is designed especially for repairing inner tubes, and will vulcanize a patch up to 12 inches in length. Uses common gasoline—no steam or electricity, no waiting—always ready for instant use.

It works automatically—needs no watching or personal attention. Any one can operate it in his odd moments, and make quick, sure and lasting repairs in a few minutes time—***at the lowest possible cost.***

**Only $12.00 Complete**

**With Half-Pound of Repair Gum**

Put one in your place of business. It takes up practically no room; requires no extra help; and will pay for itself many times over.

## ADAMSON

**MODEL S-2**

## VULCANIZER

### OUR H-2 Outfit

consists of three Model S-1 supported by floor stand and provided with hood for flue connection.

**Price Complete $30.00**

**Start a Tube and Tire Repair Department With an "Adamson"**

Immediate Shipments.
Order today.

**Adamson Mfg. Co.**
**East Palestine, Ohio**

**MOTOR TRUCK**

**Construction**
**Operation**
**Maintenance**
**Repair**
**Care**

**PRICE ONE DOLLAR**

**A work that is complete, wholly practical and deals with all subjects as the title implies.**

**Truck Care**
**Truck Repair**
**Truck Operation**
**Truck Maintenance**
**Truck Construction**

**Prepared for**
**Owners**
**Operators**
**Repairmen**
**Salesmen**

**$1.00 the copy. In combination with a yearly subscription to Motor Truck (the great national authority on highway transportation, issued monthly) $2.00.**

**This is the only book published dealing with business wagons, it is fully illustrated and represents a wonderful value.**

**THE MOTOR TRUCK**
**Times Building Pawtucket, R. I.**

**MAKE YOUR GREASE FIGURES MOUNT**

by selling the one kind of lubricants that serve your customers best.

**DIXON'S**
**GRAPHITE**
**Automobile**
**LUBRICANTS**

bring your customers back and make increased sales for you because they are the 100% lubricants.

*Send for Dixon's Dealers' Deal, No. 49-G.*

**JOSEPH DIXON CRUCIBLE CO.,**
**Jersey City, N. J.**
**Est. 1827**

GREASE DOINGS
DIXON'S GREASE No. 677

**BEARINGS SERVICE COMPANY**
Nation-wide Service on Bearings

New York
San Francisco
Chicago
Los Angeles
Detroit
Boston
Seattle
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Portland, Ore.
Pittsburg
St. Louis

BEARINGS SERVICE COMPANY

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Detroit, Michigan

Minneapolis
Omaha
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New Orleans
Indianapolis
Toronto, Can.

**VULCAN QUALITY**
AUTOMOBILE SPRINGS

*SPRINGS IN STOCK FOR ALL CARS*
90,000 Springs. 588 Types.
**6—FACTORY BRANCHES—6**
St. Louis, Mo 1402 Chestnut St.
Reading, Pa. 538 Franklin St.
Sumter S C. 29 Caldwell St.
Minneapolis, Minn. 1024 Hennepin Ave.
Dallas, Tex. 209 Houston St.
Richmond, Ind. Colonial Bldg.
FACTORY RICHMOND, IND.
**JENKINS VULCAN SPRING CO.**

Yours is the only starter we have ever seen that worked satisfactorily on a Ford car.

**The above extract is a "composite" of expressions received from hundreds of satisfied purchasers of the**

# A·B·C STARTING & LIGHTING SYSTEM

# FOR FORD CARS

Dealers and Ford owners, the country over, are unanimous in voicing this testimony. The A. B. C. System is best for Ford cars because it is built on the only right principle. It is a strictly two-unit system. The dealer who handles it sells satisfaction. He can stand back of the A. B. C. without fear or hesitation. He will find that every A. B. C. sale is a standing advertisement of his knowledge and good judgment.

## Six Things to Remember

### For Your Customer.

1—That the A. B. C. System is strictly two-unit—as good as used on all the best cars.

2—That the A. B. C. System does not cut down the power and speed of the Ford; nor interfere in any way with the operation and accessibility of the Ford engine.

3—That the A. B. C. System distributes its weight equally on both sides of the car.

### For Yourself.

1—That the A. B. C. System is easiest to sell because it has more talking points than any other Ford starter.

2—That the A. B. C. System is easiest to install because of the simplicity of design.

3—That the A. B. C. System requires minimum expenditure of time and labor for adjustments and repairs. You keep the profit.

Any one of these points is sufficient reason for the dealer to sell—for the Ford owner to buy—the A. B. C. in preference to any other starting and lighting system for Fords.

It will pay you to investigate—now—today—at flood-tide of the tremendous sale just starting. Our helpful policy—"ON AND OFF YOUR SHELVES"—will interest you—profit you. We've worked it out to a sales certainty.

A·B·C
STARTER·COMPANY
DETROIT

**ANY REASON WHY YOU CAN'T MAIL THIS COUPON—NOW?**

**A.B.C.**
**Starter Co.**
**Dept. B.**
**Detroit, Mich.**

Gentlemen: — Please send full information regarding the A.B.C Two-unit Starting a Lighting System, incl ing literature, pr terms, discounts, etc.

Name ................

Address ...........

City................

# Nearly a Million FORDS on the Road

## Help KEEP them on the Road by Using

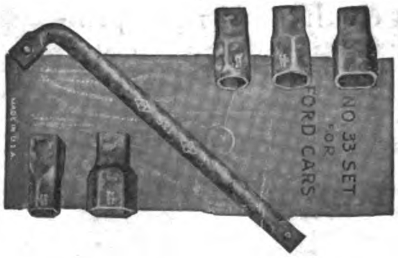
# MOSSBERG WRENCHES

## And Special Tools for FORDS

No. 17 Set—Heavy duty for Ford. 10 sockets, including those special sockets for spark plug, rear axle housing and cylinder head nuts. Price each, **$2.00.**

No. 30 "Ideal" Set for Fords. 10 sockets, including all special sizes. Ratchet handle, universal joint and extension bar. Price each, **$4.00.**

No. 15 "Major" Set—Covers all adjustments on Fords, including reversible ratchet handle. Price each, **$5.00.**



No. 33 Set—A small, forceful set for packing under the seat. Five special sockets and double-end offset handle. Price each, **$1.10.**

**This** **Means**

**Actual** **Insurance**

**If your dealer cannot supply you we will ship prepaid on receipt of price.**

Specially designed for Fords. Engineers' wrenches. 5 wrenches. 10 openings.

**Your copy of complete Mossberg Tool Book No. 191A if you will send address.**

No. 645, Reverse and Brake Pedal Tension Spring Wrench. The only practical wrench for this work Each, **50c.**

660 Wheel Puller. Indestructible and efficient. Each, **80c.**

No.675
REPAIRKIT

Combining all the special wrenches that help the smooth running of your car. Price, **$1.40.**

## FRANK MOSSBERG CO.

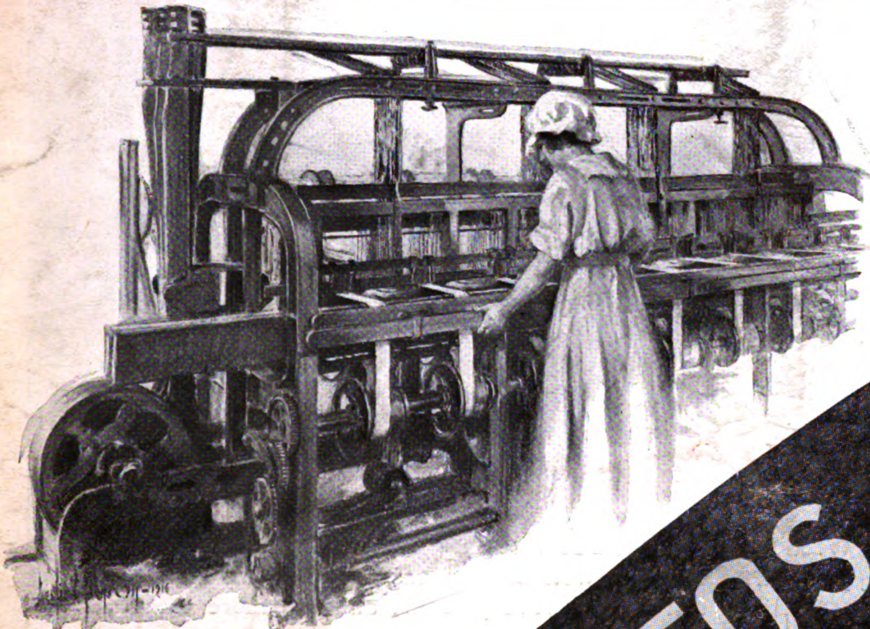
**ATTLEBORO, MASS., U. S. A.**

**BRANCHES**

Hastings & Anderson Co., Chicago, Ill
F. W. Lynn, Dallas, Texas.
D. L. Herman, Seattle, Wash.
W. W. Crandall Co., Nashville, Tenn.
Ewing-Lewis Co., San Francisco, Cal.
Ewing-Lewis Co., Los Angeles, Cal.

VOL. VII. NO. 2. PAWTUCKET, R. I., JUNE, 1917. $2.00 THE YEAR.

# THE ACCESSORY AND GARAGE JOURNAL



**Weaving the Brake Lining.**

MULTIBESTOS TRADE MARK REG.

A complete control of every manufacturing process insures the quality of Multibestos Brake Lining.

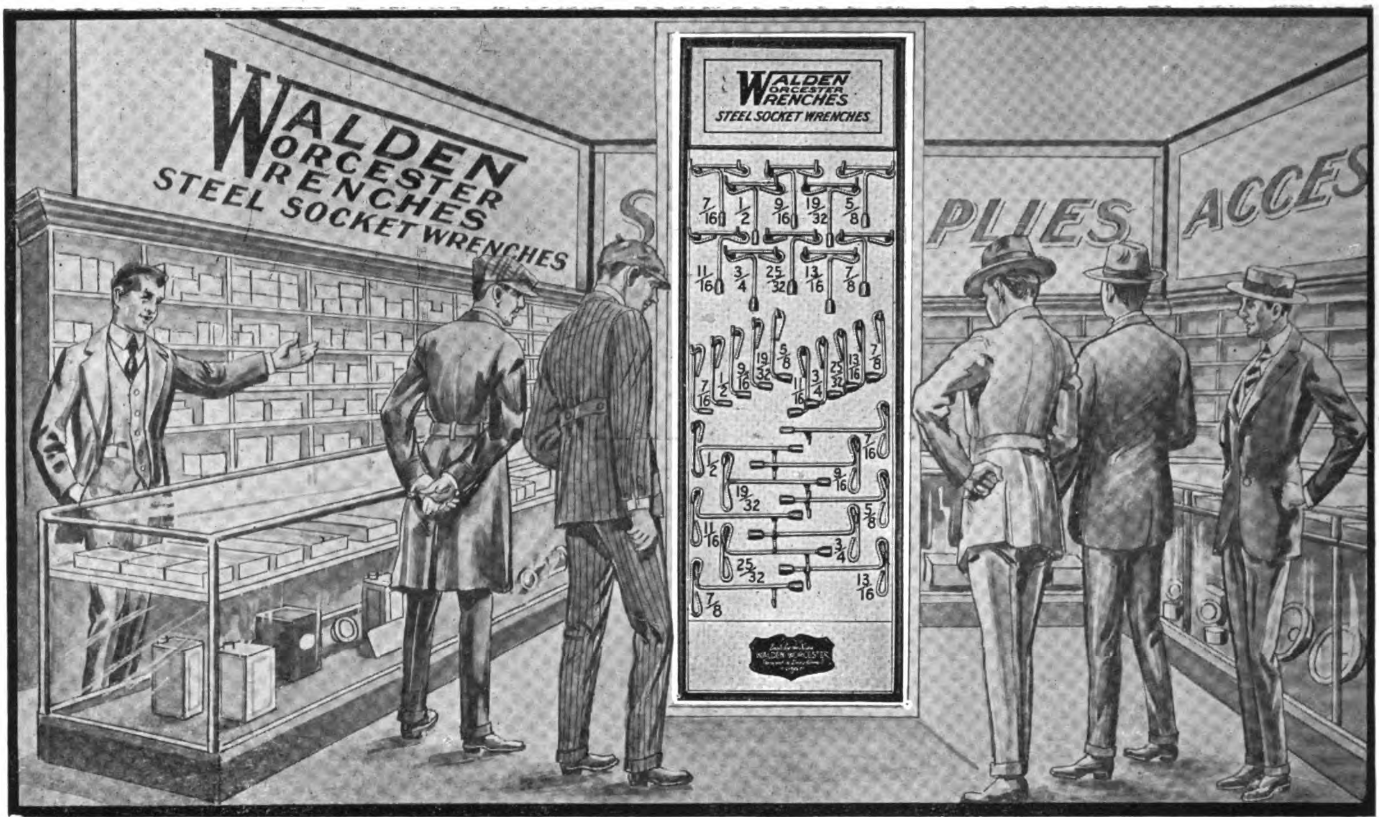
First the crude asbestos is carefully selected and represents the pick of the world's markets.

This asbestos is carded and twisted and interwound with brass wires—all in our own spinning department, under the eyes of our own experts.

Special high speed looms are used in weaving this yarn into the brake lining fabric. These machines are equipped to turn out a solid weave with no loose plies or "stuffers" which can become separated when the lining is in service. By the use of this special machinery Multibestos has more material to the square inch than any other brake lining.

More material—and that material of the best possible quality. Here is one of the big reasons back of Multibestos supremacy.

**STANDARD WOVEN FABRIC COMPANY**
WALPOLE, MASS.



# *How The Silent Salesman Works*

WALDEN-WORCESTER Wrench display boards instantly demonstrate to every customer the qualities of every type shown. This is a wonderful saving of time. The more you eliminate unproductive work the better can clerks serve patrons, and the more can they stimulate business by affording attention that will please buyers.

Think of what display means to busy customers, for time that is as valuable to them as clerks' time is to you is saved. They obtain precisely what they want—what they know will serve them best, and beyond all this is the fact that Walden-Worcester wrenches are guaranteed in the broadest sense.

Display board No. 180, for instance, shows Offset and Tee Handle Wrenches. There are three types and 10 sizes, or 30 different tools, and the stock set of six wrenches of each size and type makes possible serving any possible demand. Each wrench is priced conspicuously.

One glance at the board will sell the customer who wants a wrench. He actually sells himself, and is absolutely satisfied. That means more business.

The display boards are handsomely designed and well constructed, are covered with lithographed sheet metal, and are a decided ornament to any store. These boards are free to Walden-Worcester dealers.

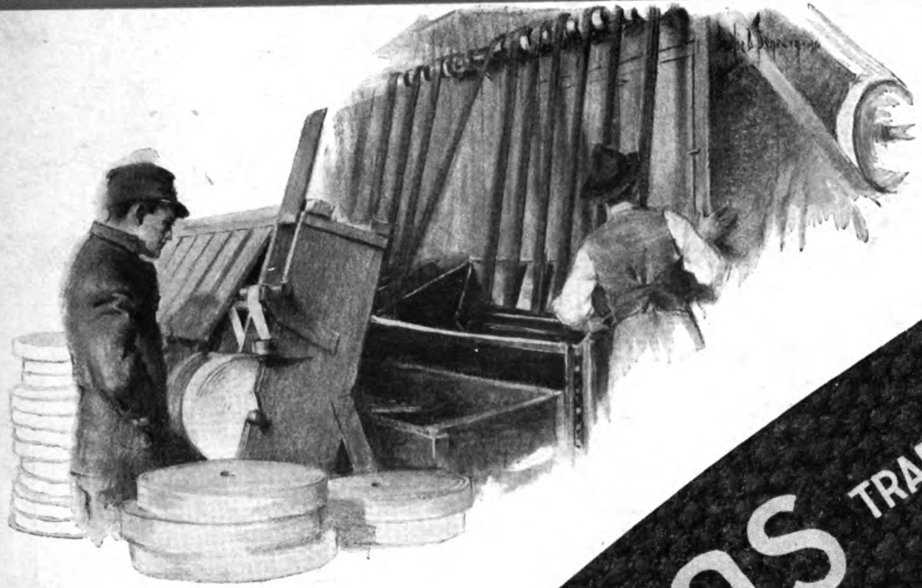
Walden-Worcester Wrenches are specialized tools, suited for every work. When orders are given for special types in quantities to justify they are supplied at practically no increase of cost.

Write today for latest catalogue. Learn of our cooperation, of our stock cabinets, our business building literature and our sales helps.

**WALDEN-WORCESTER**
INCORPORATED
**WORCESTER, MASS.**

VOL. VII. NO. 3. PAWTUCKET, R. I., JULY, 1917. $2.00 THE YEAR.

# THE ACCESSORY and GARAGE JOURNAL



The Chemical Treatment of Brake Linings

MULTIBESTOS TRADE MARK REG.

When the MULTIBESTOS fabric is taken from our looms we are reasonably sure of its quality. A glance shows that it has more material to the square inch than any other brake lining—greater firmness and greater flexibility.

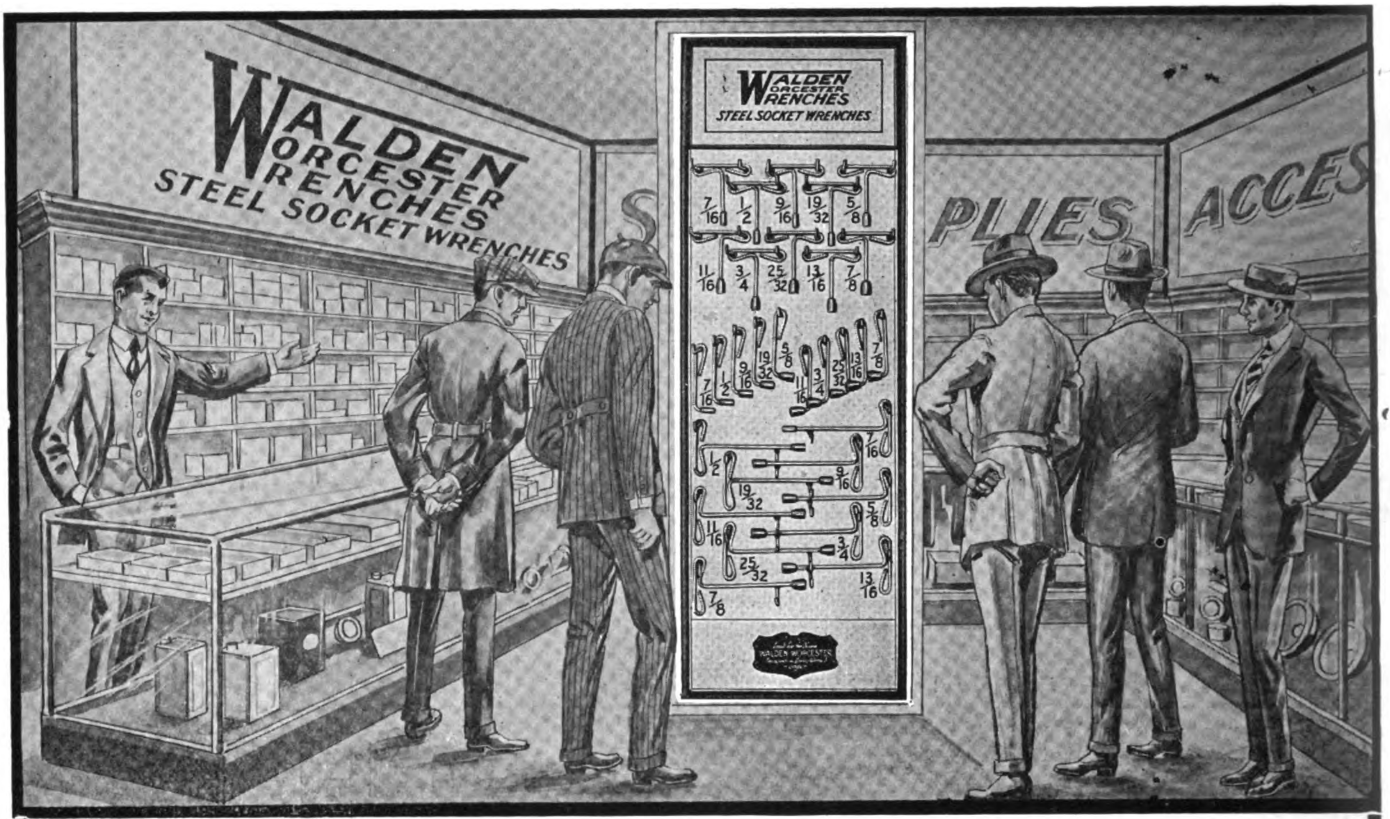
Now comes the chemical treatment—one of the most delicate processes in brake lining manufacture—the finishing touch to insure quality.

The fabric is immersed and thoroughly impregnated with a special compound. This compound permeates every fibre of the fabric and adds still further to heat and wear resisting quality of the lining.

The treatment of MULTIBESTOS is exclusive and is the result of years of study and experience.

As a result of this treatment MULTIBESTOS is not in the least affected by water, oil, grease, gasoline, or any foreign substance.

STANDARD WOVEN FABRIC COMPANY
WALPOLE, MASSACHUSETTS



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**WALDEN-WORCESTER**
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**WORCESTER, MASS.**

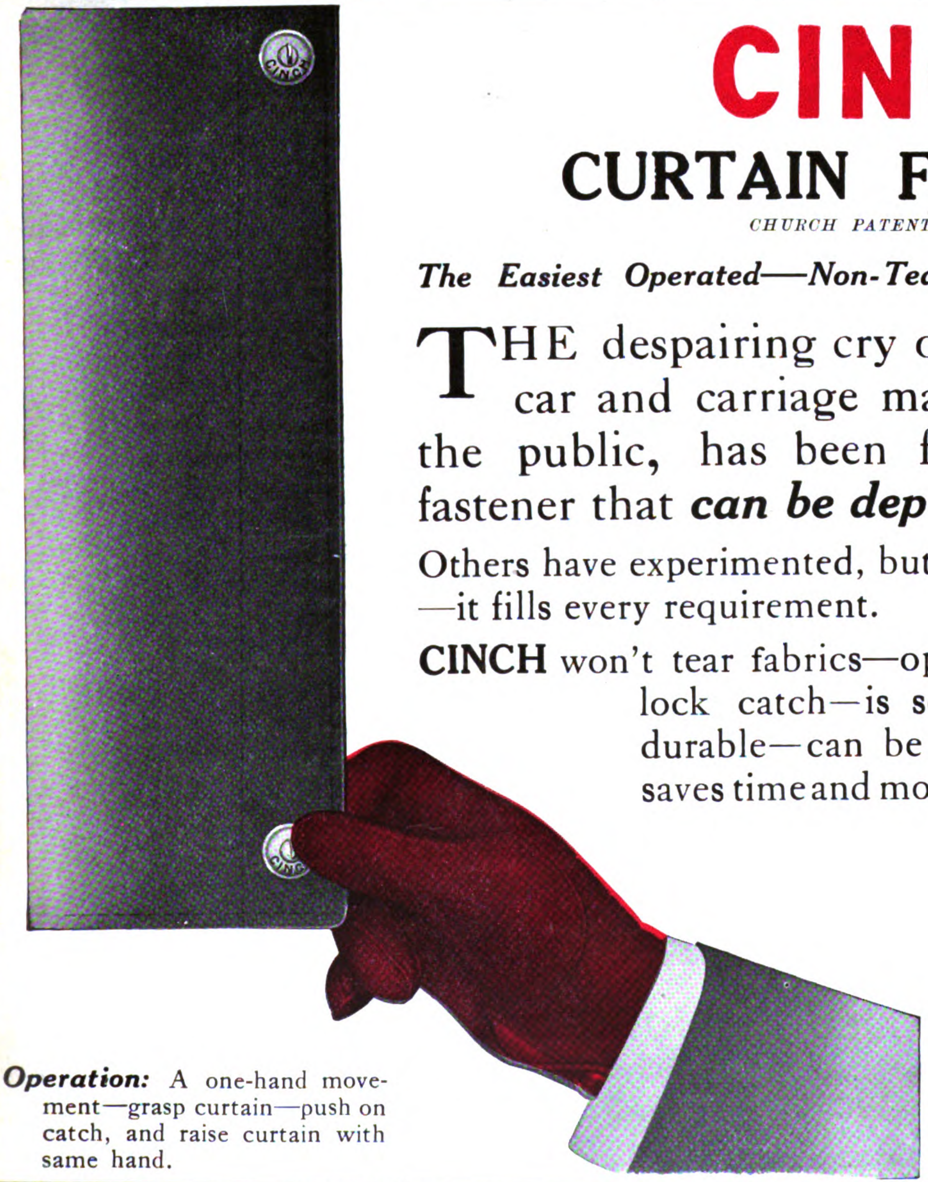
**NOTICE TO READERS.**—When you finish reading this magazine place a one cent stamp on this notice, hand same to any postal employe, and it will be placed in the hands of our soldiers and sailors at the front. No wrapping—no address. A. S. Burleson, Postmaster-General.

# THE ACCESSORY AND GARAGE JOURNAL

VOL. VII. NO. 6. PAWTUCKET, R. I., OCTOBER, 1917. $2.00 THE YEAR.

## Announcement Extraordinary!

***At Last***—A Curtain Fastener That Won't Tear Out



## CINCH
## CURTAIN FASTENER

*CHURCH PATENTS PENDING*

***The Easiest Operated—Non-Tearing—Non-Rusting Fastener***

THE despairing cry of top-makers, motor-car and carriage manufacturers and also the public, has been for a simple curtain fastener that ***can be depended upon.***

Others have experimented, but the **CINCH** is a certainty—it fills every requirement.

**CINCH** won't tear fabrics—operates easily—has positive lock catch—is scientifically constructed—durable—can be attached in any position—saves time and money—nobby in appearance.

**We are now sending out samples and price lists. Why not send us your name? It's a "cinch" you'll never regret it!**

***Operation:*** A one-hand movement—grasp curtain—push on catch, and raise curtain with same hand.

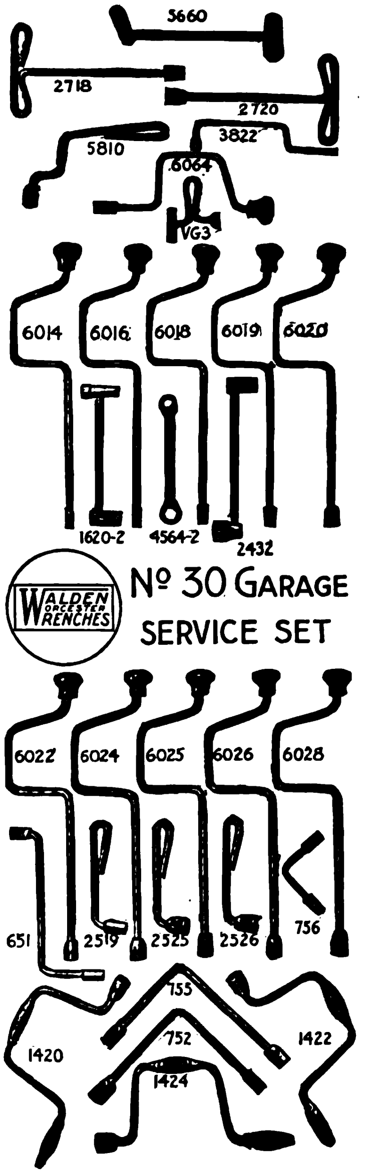
**Clinch Type, with Eyelet and Washers**

**A POSTAL BRINGS SAMPLES**

**L. C. CHASE & CO., BOSTON**
NEW YORK DETROIT CHICAGO

**WRITE FOR PRICE LISTS**

# No. 30 GARAGE SERVICE SETS


5660
2718
2720
5810
3822
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VG3
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6018
6019
6020
1620-2
4564-2
2432
Nº 30 GARAGE
SERVICE SET
6022
6024
6025
6026
6028
651
2519
2525
2526
756
755
1420
752
1422
1424

A WRENCH combination perfectly adapted for work on any motor car, with which time and labor cost to the customer may be economized, and the productiveness of the shop and its facilities greatly increased.

These are special tools, designed after careful study of garage service, each serving a specific purpose and having qualities necessary for thoroughly good work.

These 30 wrenches, some with two sockets, are equivalent to 39 different sizes and types, as follows:

| | |
|---|---|
| **Offset Wrenches** . . | **13** |
| **Speed Wrenches** . . . | **10** |
| **L-Wrenches** . . . . | **6** |
| **Special Wrenches** . . . | **5** |
| **Demountable Rim Wrenches** | **3** |
| **Tee-Handle Wrenches** . | **2** |
| **Total** . . . . . . | **39** |

The combination was made to fit all popular makes of cars,—to work wherever particular type wrenches are necessary. Every condition that makes for economy and time saving has been anticipated and utility provided for.

With the No. 30 Garage Service Set you will have every wrench you will need. Your equipment will be standardized. The quality of work insured.

List Price, $20

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# THE ACCESSORY AND GARAGE JOURNAL

VOL. VII. NO. 12. PAWTUCKET, R. I., APRIL, 1918. $2.00 THE YEAR.

# INITIAL EDITION

## JULY 1, 1918

TRACTOR WORLD

All issues of the

**TRACTOR WORLD**

will reach all tractor manufacturers, all tractor and farm implement and machinery dealers and a very large part of tractor owners.

Subscription Price, $2.00 a Year

**The TRACTOR WORLD, devoted to the farm tractor industry, trade and user, will issue the first day of each month.**

It will reflect the activities of the industry, dealing with design and engineering in non-technical terms, construction, sales and service.

It will devote a section to sales promotion that will be of exceptional interest to the trade, covering the country broadly and thoroughly.

It will specialize a department that will present to tractor owners and users mechanical information that will practically benefit them.

The magazine will be produced by an organization that covers all sections of the country—that will be in constant contact with the industry and the trade.

For advertising rates and publishing detail, address

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# MOSSBERG

**ALL STEEL WRENCHES AND TOOLS**

## Why Your Customers Want Them

Behind Mossberg All Steel Wrenches and Tools stands Mossberg national advertising—an assurance to every dealer that a new and unusual demand is continually being created for this dependable line.

Persistent advertising to all classes of wrench and tool users makes Mossberg Tools constantly called for. In so much as the Mossberg line includes so many specialties in adjustable, socket, single and double-end wrenches, made particularly for "the places hard to get at," there is a model for every need or requirement.

M TRADE MARK **MOSSBERG DEPENDABLE TOOLS** M TRADE MARK

are to be consistently called to the attention of your customers in such publications as Saturday Evening Post, Literary Digest, Hardware Age, Hardware & Metal, Motor World, Motor Boat, Implement and Tractor, Commercial Car Journal, Motorcycling and Bicycling, Motorcycle and Bicycle Illustrated, Automobile Trade Directory and American Exporter, reaching every class of possible customers for Mossberg Tools.

You will get the full benefit from our national advertising by letting your customers know that you are the Mossberg dealer for whom they are looking, and incidentally get quick turnovers—a number of them. Use our free dealer helps to do this.

We have an interesting story to tell you on the Mossberg proposition, and how it will bring an increasing number of satisfied customers to your store.

"Our simple sales policy is to deserve your business."

MOSSBERG
MOTOR WRENCH
K9

Series "K" Adjustable Wrench

No. 14 Socket Wrench Set

## FRANK MOSSBERG COMPANY

**Wrenchsmiths for Twenty Years** **ATTLEBORO, MASS.**

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